PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 115, No. 20 Thursday, November 12, 1942 Price Ten Cents

OPA Revises Newsprint Price Regulation

Amended Maximum Price Regulation 130 Prohibits Newspaper and Magazine Publishers From Using Improper Destinations to Increase Newsprint Ceiling Price—Order Effective November 16.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Nov. 11, 1942—OPA has prohibited the use of improper destination to increase newsprint prices above designated maximums in a revision of the newsprint price regulation recently issued. The general price level of newsprint was not changed by the revision.

Maximum Price Regulation 130 as revised, effective November 16, prohibits newspaper and magazine publishers from accepting delivery of newsprint at destinations other than those normally used if use of the unusual destination would increase the price above the publisher's established ceiling cost. Purchasers also are specifically prohibited from buying newsprint f.o.b. mill and paying all the freight charges themselves. This revision does not change the meaning of the regulation, but is designed to clarify it by specific prohibitions of such practices.

Regulation Based on 10 Zones

The regulation established maximum prices based on 10 zones for delivery in the United States. Port prices for shipments to certain designated ports are still fixed on a basis somewhat lower than those established for surrounding zones.

Other interpretations and amendments of the original regulation are incorporated in the revision. Among these are the definition of super standard newsprint and the establishment of maximum price differentials when this grade is used for rotogravure printing. Licensing provisions, similar to those in other regulations, also are incorporated.

Geographical limits of the pricing zones and the actual price differentials applying to each are specifically identified. Hawaii and Alaska are excluded from the list.

Alterations Made by New Order

Other alterations made by the revised regulation include:

(1) Record Requirements. These are expanded to require each buyer and seller of newsprint to record the order, and roll or package number of all newsprint bought or sold. This is designed to facilitate identification of the transaction and the paper, and to help in enforcement.

(2) Sales by Merchants. Merchants now are required to apply their markup to the price of paper in the form in which it is sold (whether it be in sheets or rolls), with a slight modification where a merchant himself performs the conversion operation. No change is at this time being made in merchant's ceiling markup percentages, pending the conclusion of a study of markups for all grades of fine papers. The merchant's maximum sales price now must include the allowance of freight on carload shipments regardless of whether the shipment is from the mill, or the warehouse.

(3) Converters. These formerly were identified as distinct from manufacturers and merchants. Now they may be either, as well as specialists in conversion. The revised regulation contains a specific list of conversion operations which now may be priced only be differentials determined by each concern's maximum price charged during a base period. October 1-15, 1941. These differentials may not include merchandising markup. Converters other than manufacturers must report immediately to the nearest OPA regional office their base period differentials with a breakdown of all variations.

(4) Cores. These were not mentioned in the original regulation. The revised regulation states that no charge shall be made for non-returnable cores except that they may be included in the billing weight of the paper. No charge may be made for returnable cores that are returned. The maximum price charged for those not returned shall not exceed the price charged between October 1 and 15, 1941.

Folding Box Orders Off 10%

CHICAGO, Ill., November 9, 1942—Orders booked by members of the Folding Paper Box Association of America in Oct. made a moderately better showing than in recent months, but the total was still well below the corresponding period of 1941. For the month just ended orders were 9.8 per cent below last year, although 12.8 per cent above September. For the first ten months of 1942 orders were 89.2 per cent of those in the 1941 period.

Artificial Rubber From Wood Is Planned

Canadian Interst Is Aroused by Stockholm Report of Projected Plant to Produce Rubber Substitute from Wood Products—Stress Forests As a War Resource—Newsprint Aide Appointed—News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 9, 1942—Interest has been aroused here by a despatch from Stockholm announcing the production of artificial rubber from wood products. The despatch is as follows:

"Production of an artificial rubber from wood products, capable of being vulcanized and suitable for use in bicycle tires, shoe heels and plastic products, but not for motor car tires, was announced here today. The process has been developed by Gösta Ehrensvärd, a young Swedish chemist, and an experimental factory has been opened at Gislaved, in central Sweden, by the Swedish Co-operative Association. It is in this city that the association maintains a number of factories manufacturing rubber products, and a full-sized factory for the production of the new artificial rubber is planned. The new product has been given the name of 'Telax.' The Co-operative Association today announced that it does not intend to monopolize the process but will offer the basic material to other manufacturers."

Scientists Concede Possibilities

Scientists at McGill University in Montreal, when shown the despatch, conceded that Canadian forests may prove a source of synthetic rubber.

"It is well known," one expert stated, "that alcohol is being produced in large quantities from the waste sulphite liquor from pulp mills, and possibly this alcohol is serving as the source of essential constitutents in the manufacture of synthetic rubber.

"At least one plant is now in process of erection in Canada for the recovery of alcohol by this means. This plant should be in operation by next March.

"On the other hand, newer methods for isolating the product known as lignin, which forms 28 to 30 per cent by weight of spruce wood, indicate marked possibilities for its use as a plastic material.

"It is possibly along these lines that considerable progress may have been made in Sweden. Such products in reality would not be synthetic rubber, but substances having only a moderate amount of elastic properties.

An extensive study of the possibilities of the production of great amounts of alcohol from waste sulphite liquor has been made by Dr. Joseph L. McCarthy, formerly a sessional lecturer and research student under Prof. Harold Hibbert at McGill University's division of industries and cellulose chemistry, and now on the staff of the department of engineering chemistry at the University of Washington, Oregon.

Sulphite Pulp Mills Could Produce Alcohol

Dr. McCarthy claims that "the huge sulphite pulp industry of the Pacific Northwest could produce at least 20,000,000 wine gallons of 190 proof alcohol, probably at a substantial profit with the alcohol price at 50 cents per gallon. If the alcohol is needed (for war purposes) the plants can be constructed largely of wood and concrete with only a small amount of scarce materials. The alcohol produced could be expected to find a ready market at present in the explosive and synthetic rubber industries."

Canada, with its colossal pulp and paper industry, could be, with the proper support, a leader in these new fields which are being cultivated with vision elsewhere, it was pointed out by McGill experts.

Restrictions on Christmas Trees

Restrictions on the delivery of Christmas trees, announced recently, have been modified by the transport department of the Industries Control Board. The order will now allow rail shipment of Christmas trees up to November 15, regardless of when the trees were cut. After that date the movement of such trees by rail will be subject to prior permit from the timber controller. There is no order regarding transportation of Christmas trees by truck.

Under the original curtailment order, it was provided that trees cut before midnight of October 31 could be delivered before November 15 but that shipments after November 15 would require a written permit from the Timber Control Office or from a regional representative of the Timber Controller.

Emphasize Forests as a War Resource

The Timber Controller for Canada, A. H. Nicholson, has issued a statement emphasizing the importance of Canada's forests as a war resource. He says: "It must be clear to every Canadian that timber control in wartime should be paralleled by the most rigid control of forest fires. Manufacture and marketing of forest products to serve the country's war requirements depend upon an unfailing flow of raw material. If that flow is to meet with no interruption the nation's forests must be held intact against every form of wastage.

"The people of Canada and their wood-manufacturing industries have cooperated whole-heartedly with the restrictions essential to the office of timber controller. It is not inconsistent for the timber controller to call attention to the anomaly of forest fire destruction playing havoc with the living source of our wood supplies.

"If organization and patriotic efforts are able to bring the vast and complicated mass of forest industries into a plan of common action, it seems to me that the same ingredients can reduce the country-wide plague of forest fires.

"This Dominion is built upon an economy of wood, and the forest resources are the harvest fields of wood crops. Wartime has multiplied the uses of wood, and we are only at the beginning of new adaptations. This surely promises continuing advantages in the peace years ahead, but there is no guarantee of that whatever, short of resolute and prompt action by all public and private agencies in stopping forest fires.

"It can be done. We all know that. And it must

be done if our wartime controls are made to cover the full economic picture."

Appoint Newsprint Aide

G. Harold Fisk, who has been closely associated with the work of the Newsprint Association of Canada, has been named by the Wartime Prices and Trade Board as special assistant to the Newsprint Administrator, R. L. Weldon, it was learned today. Mr. Fisk has been granted leave of absence by his company, Stevenson & Kellogg, management engineers, to carry out his new duties.

After the outbreak of war Mr. Fisk assisted in the work of the Newsprint Association. When Charles Vining, president of the Newsprint Association, was called to Ottawa in 1941 to assist the Wartime Prices Board, Mr. Fisk devoted more of his time to the work of the association, and when Mr. Vining became newsprint administrator last spring Mr. Fisk became his assistant.

When Mr. Weldon succeeded Mr. Vining as newsprint administrator, on the latter's appointment as head of the Wartime Informations Board, Mr. Fisk carried on with his duties as assistant. Now he has been named special assistant, effective from September, to deal particularly with the broader problems of administration, and interview senior executives of newsprint companies, acting as direct representative of the Administrator when so required.

Mills Study New Freezing Order

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 9, 1942 — Mills in Wisconsin are giving considerable study to the regulations announced last week by WPB and OPA, freezing both production and pulpwood prices. Checks are being made on production, grades and rates in order to formulate compliance policies.

Some possible shiftings of grades were under consideration in order not to come too heavily under the ban. There will be little effect of the newsprint curtailment, however, because only three mills in the Wisconsin-Michigan-Minnesota area are affected, and they produce about 10% of the domestic capacity. Most mills have shifted to finer grades, and find themselves rather generally affected by the curtailment.

Considerable quantities of Canadian wood are used in Wisconsin mills, and this supply, it was announced, does not come under the price freezing order. Some mills also are using wood from privately owned tracts. While transportation is one of the factors involved, much wood shipping is done across the Great Lakes by boat, and this diminishes the demands on the railroads. The navigation season is about over, and heavy supplies have been brought in during the summer. Stock piles therefore are adequate for some time to come with most mills for what production they are permitted to put forth.

Some mills will be at a disadvantage by being compelled to hold their production at the level of the 6-month period from April 1 to September 30. This was a period of declining output for some grades as compared to the peak reached earlier in the year. A number of machines have been idle for a long period and others were operating on a curtailed basis. Their aggregate output, therefore, will be on a level that will not permit them to approximate normal operations if the market is favorable to such a situation.

Miami Valley Ends Receivership

FRANKLIN, Ohio, November 9, 1942—On Monday, October 26, 1942, the United States District Court for the Southern District of Ohio, Western Division, upon hearing testimony in support of The Miami Valley Coated Paper Company's application for termination of the receivership of said company, approved the plan proposed and ordered that Jay Leach, receiver, return the physical property to the company on November 1, 1942, subject to the terms and conditions of said plan; that said receiver continue the collections of accounts receivable owing to the receiver, and pay accounts payable owing by the receiver; that the further operations in manufacture and sales of products on and after November 1, 1942, shall be conducted by the company and not by the receiver; that all persons, firms and corporations heretofore doing business with said receiver be notified of the discontinuance on November 1, 1942, of receiver's operation of the Miami Valley Coated Paper Company, and that they be advised that all further purchases and all further orders for coated paper products from the Miami Valley Coated Paper Company will be by and with the company, and not by and with the receiver, on and after November 1, 1942, and that Jay Leach, the receiver, will not be responsible for any obligations incurred or originating from the business of the company after said date.

The company will be operated by Mr. Srere, who has been the general manager for the receiver, and it is hoped that he will deserve the same hearty cooperation the receiver has had.

Paper Production Up in Month

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 9, 1942—Production for September was 3.9% over the same month a year ago, and was down 0.6% from August of this year, judging from employment figures of the Wisconsin Industrial Commission. The number of workers in Wisconsin mills in September was 23,200, in comparison with 23,300 a month ago, and 24,200 a year ago.

Payrolls slumped from $779,0000 per week in August to $721,000 in September, but due to several boosts in wages were 1.4% from September, 1941, when the total was $711,000.

The average work week per employee has been reduced to 39.4 hours, at an hourly rate of 78.8 cents, and a weekly wage of $31.04.

Converting and carton plants in the Milwaukee metroolitan area have been having an upturn because of substitutions of paper for scarce materials in the container field. Employment in 19 plants in September totalled 1,874 workers, a gain of 0.1% from August. The average work week has been stretched to 42.7 hours, and workers are drawing 75.6 cents per hour, with weekly checks averaging $32.27.

Schmidt & Ault Scrap Cylinder Machine

YORK, Pa., November 3, 1942—The Schmidt & Ault Paper Company, at the suggestion of the Conservation Division of the War Production Board, has scrapped all of the equipment contained in its Princess street mill which was largely the 80-inch double cylinder machine. The company is now planning to dispose of the real estate.

Midwest Reports Paper Market Is Booming

Heavy Demand For Many Types of Paper Forces Some Distributors to Allocate Orders—Earl Bryan to Address Salesmen—Paper Houses Add New Lines—Better Folding Box Demand Expected.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., November 9, 1942—The curtailment order together with the shutting off of pulp shipments east of the Rockies have combined to give the local paper market an even more "bullish" hue. Many a paper that has been "below list" has now come crowding up to near the top with book papers, long a laggard, reported as the latest of the newcomers to feel the buyers urge to get in before it is too late. Manufacturers have entered the local market with announcements of allottment procedure to customers which, in itself, would be sufficient to send the market booming. Even while there is grave concern over the ultimate effect of curtailment and consolidation of paper production the local sales offices and jobbing firms are a bit too busy to delve too deeply into the problem. Krafts, groundwoods, newsprint, sulphites —these have been reported as more active and the firmness has crept into virtually all other lines and down into the waste paper market where, despite good collections, the curtailment scare is getting plenty of attention.

Bryan To Speak At Salesmen's Meeting

Earl Bryan, executive secretary of the Wisconsin Paper and Pulp Manufacturers Association, will speak to the western division of the Salesmen's Association of the Paper Industry at its next regular meeting to be held at the Hotel Sherman on Monday, November 9. Mr. Bryan is a well known expert in the transportation field with particular knowlelge of the transportation problems as they affect the paper and pulp industry. It is reported that he will discuss ODT 18 and other traffic matters which have a direct effect on the flow of paper and on the selling job done by the able Chicago group. The November 2 session of the SAPEYES gave short shrift to the subject of politics—even though elections came the day following—with the sales executives concentrating their discussion on the new curtailment order and on the recent simplification of L-120 which, they reported, was at least a start in simplifying and interpreting the effects of this WPB order on the paper industry.

Swigart Builds Holiday Business

As evidence of its ability to keep abreast of the times and to develop novel ideas for customers, the Swigart Paper Company has suggested to the local trade that Christmas will mean more to those engaged in war work than ever before. The thought is advanced in the new Swigart catalog on holiday gift and greeting stationery and printers are advised that manufacturers now, having been out of touch with their regular customers for so long, will be looking for distinctive announcements as a genuine good will gesture. The local trade is urged to explore this field and to develop new customers in ways which tie in with war work and war business. The catalog also contains the latest price list and colorful reproductions of various designs of greeting cards. All in all, the "Idea Book" shows that the paper industry is well equipped with resourcefulness even with the more limited opportunities at hand.

Butler Adds Lines

Price lists are also at hand from the Butler Paper Company—a comprehensive report which lists reductions, discontinued lines, new lines and descriptions of these extensions. Price reductions are indicated in certain covers, bristols, post card stock, blanks and a few board items. Discontinued are Postal Bristol, Manuscript Bond and Domestic Onion Skin. Included among the new lines are Union Mimeograph, Voucher Featherweight Bond, Byron Weston Linen Record and Winchester Ledger. The duplicator line has also been increased since issuance of the last price list.

Horders Issue Seasonal Catalog

Horders, Incorporated, Chicago stationers, have recently issued a very attractive catalog containing suggested Christmas gifts available in Horder stores. The sixteen-page large size catalog with colorful cover lists a wide variety of greeting card suggestions with descriptions and order number. Also included are suggestions for holiday currency holders, letterheads and envelopes, office equipment, gift wrap rolls, desk accessories and other lines.

Brighter Day For Folding Box Industry

The Folding Paper Box Association reported this week that there might soon be some improvement in the critical demand situation. October orders booked by members of the Association were 90.2% of the total for the 1941 month and 112.8% above those of September of this year. Orders for the first 10 months of 1942 were 89.8% of the 1941 period. The October decline by comparison with last year was materially less than that of the months immediately preceding, thus giving rise to the hope that the "scarcity" and "curtailment" reports may have been replaced by the utilization of common sense.

New Chicago Paper Lines

The Chicago Paper Company has recently added three new lines including Westbrook Enamel made by the S. D. Warren Company; Brownville Blanks from the Brownville Board Company mills and Springhill Bristol from the International Paper Company.

Union Wax Paper Office Burned

Fire of undetermined origin destroyed the interior of the office of the Union Waxed Specialty Paper Company at Hamburg, N. J. Flames were shooting through the side of the building when the fire was discovered by Edward Slockbower, Ernest Kimble Jr. and Robert Hill Jr. It was out of control when the Hamburg Fire Department arrived. The interior of the office was wrecked, but records in the safe were saved.

Canada Views Freezing Order as Moderate

Joint Initial Step Taken by U. S. and Canada to Control Paper Production is Considered Preliminary Step to Further Progress of the War—Price Change Possibilities Are Revised—Late News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, November 9, 1942—Freezing of production of newsprint, magazine and periodical paper, seems to be taken here to mean only the first major step in plans to secure closer coordination of economic activities between Canada and the United States and that it is intended as a test procedure, from which experience may be gained and guiding principles discovered looking towards the drastic curtailment of all strictly civilian manufacturing, to the end that materials, men and motive power may be diverted to more essential war industries. The fact that the order has been officially acknowledged to be only a preliminary manoeuvre intensifies interest in the industry and prompts much speculation as to what ultimate regulations will be found necessary and what effects such regulations will have on allied industries such as printing and publishing.

Actually, the new orders are considered to be moderate, under the circumstances, and not quite so drastic as had been expected. It is what is implied in the intimation that this is but a preliminary move that arouses the greatest interest. The new order does little more than set up the machinery for the reduction in production and use of paper. There is no assurance that further restrictions will not be formulated.

Paper manufacturing, being rated as among the largest industrial activities, both in Canada and the U. S., it is admitted by those in the industry, was a reasonable choice for a beginning at control of civilian manufacturing, even though there are many less essential industries still in operation. The successful working out of the principles of curtailment and concentration of manufacturing and distribution in this industry will have a major influence on the next step in the economic plans between the two countries. It is understood that the purpose of the present order is to pave the way for such further curtailment of paper production as may be necessary in order to release power, transportation, labor and critical materials to more essential war production. It is further understood by the industry that it is necessary that such curtailment should be proceeded with as quickly as possible. War production has reached such a peak that diversion from less essential activities is imperative.

Price Change Possibilities Revived

The special ruling in respect to wood pulp, just issued by the Office of Price Administration in Washington, revives again the hope of Canadian newsprint manufacturers that it may yet be possible to secure an advance in the price of their product to compensate for the additional production costs incidental to labor scarcity, materials tightness, transportation changes, lowered volume, government regulations and other factors beyond their control.

The special ruling referred to authorized the Scott Paper Company, Chester, Pa., manufacturer of towels and toilet tissue, to pay a Canadian producer of groundwood pulp a price in excess of the ceiling price. It is understood here that the ceiling price in this case was $46 a ton delivered and that since April, 1941, the company had been buying under contract at $28.50, plus transportation charges, but that the shift in transportation from water to rails and the increase in Canadian freight rates has run this price up from $49.67 to $53.90 a ton delivered.

It is pointed out that even though the OPA made it perfectly clear that no wide interpretation of this exemption would be countenanced, because of the ability of the Scott company to absorb the cost increases without changing the prices of the products made from this groundwood pulp, the OPA had taken specific cognizance of the advance in transportation costs by citing this as the reason for granting the company authority to file for an exemption under the woodpulp regulation. This same factor, transportation, it is claimed, is only one of the factors squeezing the newsprint manufacturer between the ceiling price for his product in the U. S. market and the constantly increasing costs of production at home.

Power Resources Being Resurveyed

How much more electrical power the paper industry will have to contribute to the war effort may be determined by a new survey of Canadian power resources being made by Dominion Power Controller H. J. Symington.

What Canada's all-out war effort will require in the way of additional power is presently being studied by Mr. Symington. Previous forecasts of requirements have tended to under-estimate rather than over-estimate the country's needs. This has been particularly true of the power requirements of subcontractors. The needs of the prime contractors have been plotted with some accuracy, but the overall figure has varied so much from actual requirements that a new survey is considered necessary.

So far the Power Controller has been able to make adjustments so that no industry on war work would suffer from a lack of power. This has been possible largely by the diversion of some 150,000 h. p. of generator capacity from the pulp and paper mills.

Powell River Shops on War Work

The Machine Shops of the Powell River Company's Pulp and Paper Mill, of Powell River, B. C., are now playing their part in the bits and pieces program in connection with Canada's war industry. The pulp and paper mill machine shop is now working on a contract for Corvette lubricators. The present contract is a small one and is largely in the nature of an initial test of the equipment. The job is a specialized one and some of the best machinists in the organization are engaged on this work. It is believed that the pulp and paper mill machine shop facilities will be used more and more extensively in this type of work in the future, and an additional night shift is to be started on war orders soon.

Obituary

Floyd Leslie Carlisle

Floyd Leslie Carlisle, aged 61, prominently connected with the pulp and paper industries, chairman of the board of the Consolidated Edison Company and of the Niagara Hudson Power Company, died Monday in the North Country Community Hospital in Glen Cove, N. Y.

Mr. Leslie, a leading utilities magnate and one of the nation's wealthiest men, lived at Locust Valley, L. I. An embolism was given as the cause of death.

Mr. Carlisle's death was sudden and unexpected, since his condition had been reported as "good." Because of this his physician, Dr. John M. Galbraith, of Glen Cove, decided to perform an autopsy.

Mr. Carlisle, who entered the hospital on Oct. 25 for "rest and observation," is survived by his wife, Mrs. Edna Rogers Carlisle, and four children. They are John W., Adele, Floyd L., Jr., and Catherine Carlisle.

The story of Mr. Carlisle's rise is another typical saga of the American self-made man. He was born at Watertown, N. Y., on March 5, 1881, the son of William S. and Catherine Burdick Carlisle. He attended public schools of Watertown and Dayton, Ohio, and then won a scholarship to Cornell, from which he was graduated in 1903.

He then took up the study of law in the office of his older brother, John, and practiced in Watertown until 1910. He found the law practice neither interesting nor remunerative and so he turned to banking in 1910 beginning with a merger of two small banks which he effected. From then on his fortune grew to the point where today it is estimated to be $175,000,000.

At the time of his death he was one of the leading power magnates of the country. Ae head of Consolidated Edison he was chief of the biggest distributor of gas, electricity and steam in the United States and as head of the Niagara Hudson he directed the largest corporate producer of power in this country.

It was in 1916 that he began his venture into power. In that year he headed a group of business men who bought control of the St. Regis Paper Company. The paper business was continued but the group also turned to waterpower and through a series of purchases and mergers became in 1929 the Niagara Hudson Company.

In 1930 he was elected to the Consolidated Edison Board and also accepted chairmanships and directorates on other companies—including paper, rayon and power corporations. His directorates and club connections form one of the most impressive in the financial world.

Besides his service as chairman of the boards of Niagara Hudson and Consolidated Edison, Mr. Carlisle was a director of about a score of other companies, most of them either public utilities or paper concerns. He served also for a while as a director of the National City Bank and the Marine Midland Trust Company, but resigned his banking connections as the result of legislation enacted at Washington.

Mr. Carlisle was a trustee of Cornell University and a sponsor of the Forestry School of St. Lawrence University. He was a member of the American and New York State Bar Associations.

An ardent yachtsman, he raced his Avatar, an M Class sloop, in many Long Island Sound regattas, winning a number of cups.

His clubs included the University, Cornell, New York Yacht, Seawanhaka-Corinthian Yacht, Manhasset Bay Yacht and Engineers.

Alfred Ellsworth MacAdam

Funeral services for Alfred Ellsworth MacAdam Sr., president of the A. E. MacAdam Company, Inc., 95 Lexington avenue, Brooklyn, N. Y., and a founder of the Metropolitan Bag & Paper Distributors Association, who died suddenly November 1 at his home on Lakeview avenue here, were held at the Fairchild Chapel, 86 Lefferts Place, Brooklyn.

Mr. MacAdam, who was 82, was a pioneer paper dealer in Brooklyn, having founded his business there 62 years ago. A member of the Classon Avenue Presbyterian Church, he was on its official board, and also was a member of Bedford Lodge, 574, F. & A. M.

Mr. MacAdam was the first president of the Metropolitan Bag and Paper Distributors Association and served in that capacity for three years. He was a native of Chicago and came to Brooklyn as a child.

Surviving are a son, Alfred E. MacAdam Jr.; a daughter, Mrs. Alfred D. Foster Jr., and three grandchildren, Alfred E. MacAdam 3d, Errol MacAdam and Mrs. Dorothy Connally.

Burial was in Green Wood Cemetery.

Olof H. Hedstrom

[FROM OUR REGULAR CORRESPONDENT]

ANDERSON, Ind., November 9, 1942 — Olof H. Hedstrom, 67 years old, president of the Hartford City (Ind.) Paper Company died Friday after suffering a heart attack the day before. He went there in 1905 to establish the paper company and was credited with being one of the first manufacturers to introduce glassine and waxed papers. The widow and a son, Lieut. Olof Hedstrom Jr., of Detroit, Mich., survive.

Mrs. Gertrude Everest

Announcement is made of the death of Mrs. Gertrude C. Everest, 79, November 1 at Grand Rapids, Mich. She was the mother of D. Clark Everest, president and general manager of the Marathon Paper Mills Company, Rothschild, Wis. Burial took place November 3 at Grand Rapids.

S. Garrett, Jr. on WPB

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 9, 1942—Sylvester Garrett, Jr., son of Sylvester Garrett, of Garrett-Buchanan Company, has been appointed field supervisor for the War Labor Board, which has recently set up quarters in Room 1215 Widener Building. The functions of the WLB, headed by James Byrnes, former associate judge of the Supreme Court, economic stabilizer, are to adhere to the rules and regulations which Chief Byrnes announced would affect all hired help earning less than $5,000 a year. No additional compensation or emolument can be paid to any employes now receiving $5,000 a year without the consent of WLB.

When Shifts Run
'ROUND THE CLOCK,
Shift to
ROLLWAY
RIGHT-ANGLED LOADING
for
BETTER BEARING
SERVICE

● The load which can be safely applied to a bearing depends more on *how long* and *at what speeds* the load is carried than it does on the crushing strength of the metals. That's why today's full-speed, 'round-the-clock operation definitely calls for the higher service factors provided by Rollway's right-angled loading of solid-cylindrical roller bearings.

Here's what it means: Rollway splits every load into its two simplest components of pure radial and pure thrust. It carries each of these components at right angles to the axis of solid, cylindrical rollers. Oblique loading is eliminated. Sliding friction is reduced to the vanishing point. And a more compact bearing assembly with more massive rollers of uniform cross-section is the result. You reap the benefits in longer bearing life, higher machine speeds, less down-time and less service attention.

★ Send us your plans today for free engineering analysis and bearing recommendations. Most applications require only American standard metric dimensions and tolerances that need no costly extra tooling or different machine set-ups.

TYPE MCS DOUBLE WIDTH RADIAL, interchangeable with standard double-width bearings made to S.A.E. dimensions.

TYPE SDT DOUBLE ACTING THRUST for slow-speed service or for higher speeds where the direction of thrust is not reversed frequently or at high speeds.

REMEMBER—you can usually change over from other bearings to Rollway's of higher load capacities without increasing boundary dimensions.

ROLLWAY
BEARING COMPANY, INC., SYRACUSE, N. Y.
BUILDING HEAVY-DUTY BEARINGS SINCE 1908
BEARINGS

Retail Prices for Crepe Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1942—Maximum prices at which manufacturers and retailers may sell unprinted single weight crepe paper in folds has been established by OPA in an action taken which simultaneously transfers these paper items from the control of the General Maximum Price Regulation to the regulation covering industrial and paper products.

The action was taken in Amendment No. 10 to the Maximum Price Regulation No. 129 effective November 6. Besides the specific dollar and cents controls placed over the product, sold by retailers to housewives for decorative uses, the amendment extended until February 15 the date for a previously announced retail price reduction which was to have gone in effect January 18 and sets forth the top temporary prices at which retailers may sell until then.

The price reduction was ordered November 2 (OPA-T-248) as part of the OPA policy to meet quantity reductions with commensurate price reductions. Crepe paper folds are sold usually in 10-foot folds but these have been cut to 9-foot folds by some manufacturers as part of a conservation program and also to meet increased costs.

The prices established by the order are listed in the following table:

Dimensions	Ratio, Form	Manuf. del. Price per gross	Retail price after Feb. 15	Retail price before Feb. 16
9 ft. x 20 in.	2¾ to 1 packaged	$7.80	$0.09	.10
9 ft. x 20 in.	2¾ to 1 bulk	5.25	.09	.10
9 ft. x 20 in.	2¾ to 1 packaged	6.84	.09	.10
9 ft. x 20 in.	2 to 1 packaged	6.12	.09	.10
7½ ft. x 20 in.	1½ to 1 packaged	3.96	.04	.05
9 ft. x 20 in.	1½ to 1 packaged	4.20	.05	.05

Labor Arbitration Rules

The American Arbitration Association announces a revised edition of its Voluntary Labor Arbitration Rules of Procedure, to meet war regulations and conditions. The Rules are accompanied by a Manual for Using the Rules, covering such important subjects as: Panels of Arbitrators; Summary of Procedure with Respect to Parties, Arbitrators and the Association; Institution of Proceedings; Appointment of Arbitrators; Hearings and Awards. A special section on the arbitration of wage disputes is included, which contains procedure for the reference of wage decisions to the National War Labor Board for review and directions for expediting proceedings under its Rules, in relation to policies set forth by the War Labor Board.

These Arbitration Rules and Manual are of the greatest value to attorneys, corporation officials, and union leaders who may have occasion to use arbitration, inasmuch as they answer such questions as:

How is an arbitration case prepared?

Can wage disputes be settled by private voluntary arbitration, and how?

How does an artibrator make an award?

What are the procedures at an arbitration hearing?

Can absolutely fair and impartial arbitrators be obtained?

What should an arbitration cost?

How much time is saved by arbitration?

A complete index enables those using the Rules and Manual to find immediately the pertinent rule or instruction needed in a proceeding. The Rules have been formulated by the joint effort of management and labor, and have the benefit of the experience of the Association in more than a thousand labor arbitrations.

The Rules and Manual are available upon request to the American Arbitration Association, 9 Rockefeller Plaza, New York City.

American Engineering Names Consultant

American Engineering Company, Philadelphia, announces the retention of Professor E. L. Midgette, as consultant for the company in its multiple activities. Professor Midgette assumes his new duties at once. He remains, however, at his post as Professor of Machine Design at the Polytechnic Institute of Brooklyn.

Professor Midgette received his bachelor and master degrees in mechanical engineering from the University of North Carolina. Subsequently he was an engineer for the U. S. Rubber Reclaiming Company, Inc., Buffalo, New York; instructor of machine design at Johns Hopkins University; and professor in charge of laboratory sciences at St. John's College, Annapolis, Maryland.

Because of his years of research and training in machine design, Professor Midgette is amply prepared for the work ahead of him—the development of new designs or products and the improvement of existing ones.

MacNaughton Boys in Air Corps

William G. MacNaughton, engineer of the Newsprint Service Bureau, New York, received word early this week that his elder son, William Gilbert, had been graduated as a Lieutenant Navigator in the U. S. Army Air Corps at the Air Training Field at Hondo, Texas. William MacNaughton worked for two years at the mill of the International Paper Company, Southern Kraft Division, Georgetown, S. C.

Mr. MacNaughton's younger son, Peter, is training as a pilot in the Army Air Corps at Gunters Field, Ala., and will graduate in January. Peter worked for two years in the mill of the International Paper Company, Southern Kraft Division, Panama City, Fla.

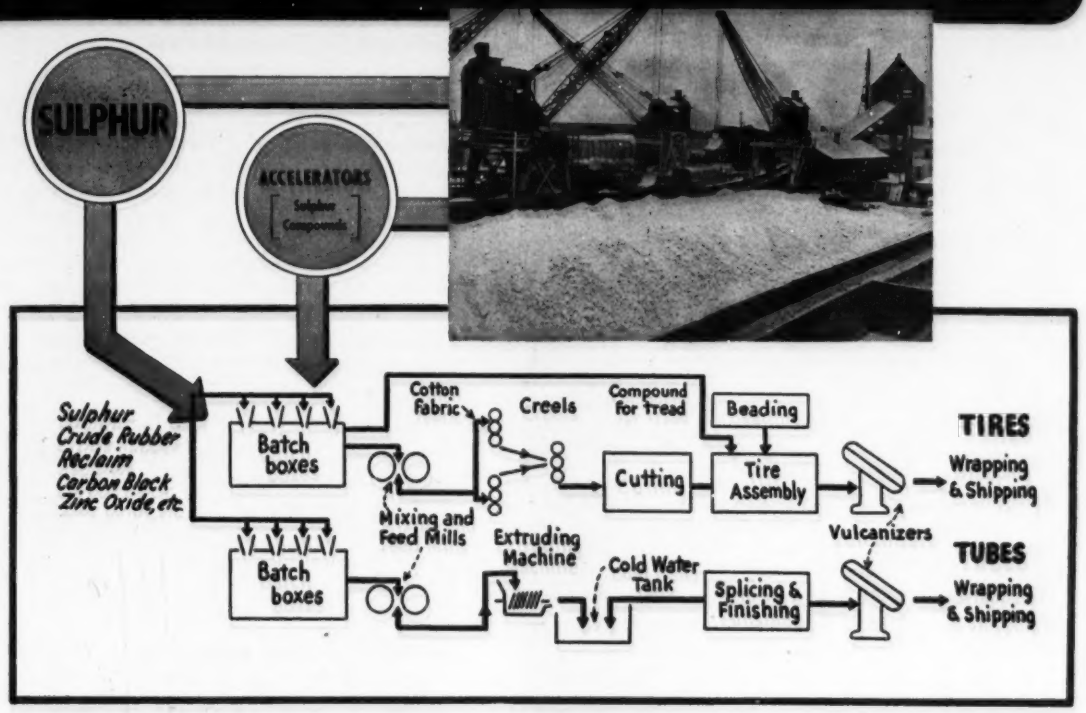
Western Waste Dealers to Meet

The Western Division of the National Association of Waste Material Dealers, Inc., will hold a dinner meeting on Monday evening, November 16, at the Chicago Bar Association, 29 South LaSalle street, Chicago. Dinner is scheduled for 6:30 P. M.

In the announcement sent out by Ben Friedman, chairman of the Western Division, it is stated that some important matters will be discussed among which will be the effect of the new transportation setup, through ODT Order No. 18.

The meeting will be open to non members but reservations should be in at an early date. They should be sent to Ben Friedman, Box 27, Hammond, Ind. A very enjoyable and informative meeting is anticipated.

HOW SULPHUR SERVES INDUSTRY



RUBBER

Raw rubber is a soft, tacky substance. Compounded with 2% of Sulphur and heated to 140°C. it becomes the rubber so universally used. Accelerators and pigments, many of which either contain Sulphur or are processed with the aid of Sulphur compounds, impart specific properties to rubber. Heated with a larger amount of Sulphur it is converted to hard rubber, for many years used in the manufacture of innumerable articles.

Sulphur has been used by the rubber industry since Goodyear discovered the vulcanization process in 1839. Today, when a synthetic rubber industry is being created, we find the importance of Sulphur to the rubber industry undiminished. Not only are various Sulphur compounds used in the production of many of this new industry's raw materials but, as before, Sulphur is used in the vulcanization process. And one of the new synthetic rubbers contains more than 80% Sulphur.

Shortages threaten in many commodities but there are no shortages of Sulphur for the rubber industry. Texas Gulf Sulphur Company has available for immediate shipment more than enough to supply not only the rubber but all Sulphur-consuming industries for more than a year.

TEXAS GULF SULPHUR CO.
75 E. 45th Street New York City
Mines: Newgulf and Long Point, Texas

11-TG-3

To Organize Transportation

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1942—To assure workers adequate means of getting to their jobs despite rationing restrictions, certain industrial and other plants with 100 employees or more will be required to set up Organized Transportation Plans under nation-wide mileage rationing, OPA has announced, acting in accord with the national rubber conservation program.

The Transportation Plan, in each case, will be organized under a committee, or individual, thoroughly familiar with transportation facilities around the plant, with distances employees must travel, their need for autos to get them to and from work, and their ability to share cars.

The committee, or official, in charge of each Organized Transportation Plan, should be a joint management-labor group, OPA officials said, or a similar group or individual appointed by agreement between management and labor representatives.

Under the new OPA mileage regulations, this committee must review the applications of all employees at such establishments seeking more gasoline rations than the basic A book provides. Committee approval must be obtained before the application is submitted to a local War Price and Rationing Board.

Urging the affected plants to set up their Transportation Plans at once, OPA officials pointed out that local rationing boards will begin receiving applications for supplemental rations on November 12. This means that transportation committees should be organized in the plants before that date.

Leeds & Northrup Get Army-Navy E

Admiral Henry A. Wiley in presenting the Army-Navy E recently to the Leeds & Northrup Company, Philadelphia, said that the recommendations to the Navy, on which the award was based, "could not have been higher," and urged further increase in production.

Wm. L. Batt, vice-chairman, WPB, expressed the Board's pleasure at seeing the wartime achievements of industry so fully recognized by our armed forces.

President C. S. Redding of the Leeds & Northrup Company, joined by spokesmen for L&N employee groups, pledged continued increases in the company's out-put of the classified war material which has been superimposed to a greatly augmented production of its established lines of instruments, telemeters, controllers and heat-treating furnaces.

Complain Against Low Kraft Prices

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 9, 1942 — Complaints are rampant in this area against merchants that have brought ceiling prices, particularly in kraft, to such low levels that there is very little profit. So flagrant have been the cases where dealers have deviated from ceiling prices, it is thought by some in the trade that if persisted in, the matter should be taken up with Sylvan L. Joseph, regional OPA administrator for the Philadelphia district, who has jurisdiction over Montgomery, Bucks, Chester, Delaware, Berks, Lehigh, Northampton, and Philadelphia counties, as well as many others.

Reliance Get Renewal of Navy E

In a simple noon-day ceremony November 4, at the company's main plant on Ivanhoe Road, Cleveland, Ohio, The Reliance Electric and Engineering Company received a new Navy "E" pennant which carries a star as indication of the renewal by the Navy Department of this high award which was first presented Reliance six months ago for outstanding performance on Navy war work.

The presentation was made to Clarence L. Collens, Reliance president, by Lieutenant Commander A. R. Staudt, attached to the Cleveland office of Inspector of Naval Materials, at a luncheon in the company's cafeteria, to which all first shift and office workers were invited as guests of the management.

This meal, complete with all the trimmings, was repeated at 7:45 in the evening, at 4 the next morning and again at noon, so that all of the more than 1500 men and women employees in the company could be afforded an opportunity to participate.

Entertainment was provided the diners by an eleven-piece orchestra and a quartet. Company executives were also present at all three sessions. "We have eaten more pie a la mode than was good for us," said Mr. Collens, "but the chance to meet with our employees on all three shifts was too much worthwhile to be passed up."

Reliance was the third Cleveland concern to be awarded the "E" pennant given by the U. S. Navy in recognition of outstanding services in the production of Navy material vital to the war effort. The original presentation by Rear Admiral William C. Watts was made on March 24. Since that time Reliance has gone into production in a second plant and only ten days ago announced the leasing of a third Cleveland plant, where a special Marine Division is now in the process of being set up.

Fort Orange Employs Many Women

[FROM OUR REGULAR CORRESPONDENT]

Castleton, N. Y., November 9, 1942—About 100 women are being employed at the Fort Orange Paper Company and all are producing materials for the fighting forces. Paper cartons of all sizes and descriptions are being turned out at the plant and capacity schedules are being observed. Cartons are being produced for the army rations while cartons for dextrose tablets are also in great demand. Cartons for cotton batting are also being produced on an extensive scale at the big plant. The company also operates its own railroad, has two small engines, several freight cars and an antiquated but efficient coach which hauls the workers to and from the plant each day. The company recently celebrated the 80th anniversary of its founding and on its office walls is a group picture of the women workers of the last World War. An inscription explains that the women were replacing men to fight the enemy.

Joins N. E. Paper Merchants Assn.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 9, 1942—The G & S Paper Company, Newton, Mass., has been admitted to membership in the New England Paper Merchants Association.

Michigan Discuss Mechanical Trades

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry held its regular monthly meeting at the Union Building (Walwood Hall), Western Michigan College of Education on November 3, 1942, F. D. Elliott, chairman, presiding.

R. C. Germanson, Kalamazoo Vegetable Parchment Company, was appointed treasurer of the section by the executive committee.

The chairman announced the appointment of the Membership Drive Committee, consisting of W. S. Taylor, American Cyanamid and Chemical Corporation, chairman; Paul deGuehery, Michigan Paper Company; and Merle Wilkins, Bryant Paper Company.

E. Frank Whittington introduced the Director of the Industrial Arts Department of the college, Elmer Weaver. Mr. Weaver outlined the beginning of the Aircraft Mechanical Trades course, started in 1939, under the sponsorship of the United States Government to stimulate flying and build up a supply of trained pilots.

The program was organized basically to include: (1) preliminary training for pilots, (2) train aircraft mechanics, and (3) train workers for industry.

The training program is extremely active at present and their mechanics are actually rebuilding cracked up planes which must pass federal inspection before they can be put in service again. Training of people for actual production jobs in aircraft factories is also being carried out and courses in welding, riveting, engine mechanics, and radio repair work are being given. So far the college has trained 320 pilots of which 167 now have commissions. The pilot training course is actually a weeding-out course of primary training. After taking this course only 10% of the men go on to more advanced training in the armed forces "wash out" while among those who have not had this primary training about 40 % "wash out."

The members and guests took a trip through the various shops in the new Aircraft Mechanical Trades Building.

Among those present were: Harold E. Barnes, Fred L. Chappell, Paul de Guehery, G. F. Des Autels, H. D. Eliason, F. D. Elliott, Brinton Freeman, R. C. Germanson, John A. Heenan, Lester H. LaLiberte, A. L. Sherwood, Edmund B. Taylor, Frank Whittington, and Merle R. Wilkins.

To Control Inventories

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 4, 1942.—Donald M. Nelson, WPB Chairman, announced that he will soon issue an order establishing a system of control over inventories of finished consumers' goods of wholesalers, retailers and manufacturers throughout the country.

Information reaching WPB through voluntary sources and through various Government agencies has indicated that great pressure is being exerted on markets as a result of over-buying of consumers' good. Mr. Nelson stated that as a result of this information the special Wholesale and Retail Inventory Policy Committee of the Office of Civilian Supply had unanimously recommended to him the prompt issuance of an order establishing a control of inventories as the only effective means of achieving more equitable distribution of inventories throughout the country and of protecting the many merchants who have been complying with previous WPB recommendations relating to the maintenance of "normal" inventories.

The order now being drafted to put the system into effect, Mr. Nelson said, will require the achievement of normal inventories by the early part of 1943. The basis of the control system will be the one recommended by the Committee and approved by Mr. Nelson September 5. This system requires each merchant to maintain the same relationship of his stock to his sales which he had on the average in comparable quarters of 1939-40-41. In this way sales increases or decreases would result in proportionate increases or decreases in allowable inventories. Forms indicating details for arriving at "normal" inventories will be made available as soon as possible.

Power Diversion Aids Abitibi Co.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., November 9, 1942 — Reflecting lower tonnage output of newsprint and pulp for sale, Abitibi Power & Paper Co. reports net earnings, before taxes, depreciation and bond interest, at $654,544 in September this year, compared with $1.1 million in the same months of 1941. For the first nine months of this year there has been a decline of $394,558, or 6%. September, 1942, earnings include $118,937 received as premium on U. S. exchange.

For October, G. T. Clarkson, receiver and manager, estimates the newsprint shipments will be about 46,000 tons, up 12,127 tons from September this year and comparing with combined total shipments of newsprint and substitute products of 51,489 tons in October last year.

This increase is stated to include tonnage required to be supplied by Abitibi to offset interruptions of power supplies to other Canadian newsprint mills. Mr. Clarkson adds that this newsprint is being supplied "at rates of recovery not yet determined."

L. L. Brown Closes Upper Mill

Conditions brought about by the war will result in the upper mill of the L. L. Brown Paper Company on River street, North Adams, Mass., suspending operations for the duration according to the *Transcript*.

The mill, it is said, has reached a production point where there is at present no further demand for the paper product it has been making other than that which can be supplied by stock on hand.

The mill, which had not been used for some years, resumed operations about a year and a half ago when a corporation separate from the Brown company but under its control was formed. Arthur B. Daniels, 2nd, was in charge of operations as superintendent. Approximately 65 persons have been employed at the upper mill, but it was stated that some of these have arranged for jobs in other industries while the remainder will enter the employ of the Brown mill at Center and Commercial street, with which plant Mr. Daniels also will be associated.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending November 7, 1942

STOCKS

	High	Low	Last
A. P. W.	1¾	1½	1¾
Armstrong Cork Co.	28¾	27¼	28¼
Celotex Corp.	7½	7¼	7⅜
Celotex Corp., pf.	70	70	70
Certain-Teed Products Corp.	2¾	2½	2¾
Certain-Teed Products Corp., pf.	29	28	28¾
Champion Paper & Fibre Co.	18⅞	18½	18½
Champion Paper & Fibre Co., pf.	100½	98⅛	100½
Congoleum Nairn Co.	16¾	16	16⅝
Container Corp. of America	16⅜	15½	16
Continental-Diamond Fibre Co.	7¼	6¾	7⅛
Crown-Zellerbach Co.	11¾	11⅝	11¾
Crown-Zellerbach Co., pf.	84½	83½	84⅜
Dixie-Vortex Co.	9	8¾	9
Dixie-Vortex Co.—A	36⅞	36½	36⅞
Flintkote Co.	13⅞	13	13⅜
Flintkote Co., pf.	96	96	96
Robert Gair	1⅞	1¾	1¾
Robert Gair, pf.	9⅜	9¼	9¾
International Paper Co.	9⅞	9⅜	9½
International Paper Co., pf.	49	48¼	48¾
Johns-Manville Corp.	65¾	62	65⅜
Johns-Manville Corp., pf.	129	129	129
Kimberly Clark Corp.	26½	26¼	26¼
MacAndrews & Forbes	18½	18	18
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	28¾	28¼	28¾
Mead Corp.	6½	6¾	6¼
Mead Corp., pf.	75	74	74
Paraffine Companies, Inc.	31½	31½	31½
Paraffine Companies, Inc., pf.	100	100	100
Rayonier, Inc.	9⅞	9¼	9⅞
Rayonier, Inc., pf.	....	....	....
Ruberoid Co.	18½	18	18¼
Scott Paper Co.	37½	36⅞	37½
Scott Paper Co., pf.	114	114	114
Sutherland Paper Co.	24	23½	23¾
Union Bag & Paper Corp.	8½	8⅜	8⅜
United Paperboard Co.	3⅜	3¼	3⅜
U. S. Gypsum Co.	58½	56	58½
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	13½	13	13½
West Virginia Pulp & Paper Co., pf.	98½	98½	98½

BONDS

Abitibi Pulp & Paper Co. 5s '53	48	47⅝	47⅞
Celotex Corp. 4½s '47	98⅜	98	98
Certain-Teed Products Corp. 5½s '48	92½	91	92¼
Champion Paper & Fibre Co. 4¾s '50	105	105	105
International Paper Co. 6s '55	105¼	104⅞	105
International Paper Co. 5s '47	102½	102½	102½
Mead Corp. 4½s '55	....	....	....
West Virginia Pulp & Paper Co. 3s '54	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending November 7, 1942

STOCKS

	High	Low	Last
American Box Board Co.	4⅞	4¾	4⅞
Brown Co., pf.	....	....	....
Great Northern Paper Co.	27¼	27¼	27¼
Hummel-Ross Fibre Corp.	3¾	3¾	3¾
National Container Corp.	9	9	9
St. Regis Paper Co.	1¾	1⅝	1⅝
St. Regis Paper Co., pf.	115	110	115
Taggart Corp.	2¾	2½	2½

BONDS

American Writing Paper Co. 6s '61	....	....	....

Scott Co. Nets $1.57

The Scott Paper Company for the nine months ended September 30, reports earnings were equivalent to $1.57 a share for the common stock, after Federal taxes, on the basis of the 1942 Revenue Act, without provision for post-war credit. This compares with $1.80 a share for the same period of 1941.

Flintkote Votes Dividend

The Flintkote Company has declared a dividend of 35 cents a share on the common stock, payable December 21 to stockholders of record December 11. Previous payment was 15 cents made September 15. Total disbursements for 1942 are 90 cents a share, compared with $1 in 1941.

Brown Reports After Reorganization

The Brown Company and its wholly-owned Canadian subsidiary, Brown Corporation, report their net profits for the first forty-four weeks of the first fiscal year following reorganization of Brown Company under Section 77-B of the Bankruptcy Act, together with their working capital positions.

Brown Company's net profit after provision of $1,200,000 for estimated Federal Income and Excess Profits Taxes was $906,190.

The company's working capital, after repayment of $1,878,836 on its long-term Reconstruction Finance Corporation loan and after the transfer of $1,284,930 bond interest from long-term debt to current liabilities, was $5,567,976 on October 3, 1942.

Interest on the company's general mortgage bonds, which accrues from December 1, 1939, cannot be paid prior to June 1, 1943, without the consent of the Reconstruction Finance Corporation. After obtaining R.F.C. consent the company made a payment of six months' interest in August, 1942. Until all accrued interest has been paid in full, the company is not permitted to pay dividends on its new preferred or common stock voting trust certificates.

Brown Corporation's net profits, stated in Canadian dollars, for the forty-four weeks after provision of $1,425,400 for estimated Dominion Income and Excess Profits Taxes was $872,571. Brown Corporation's working capital at October 3, 1942, stated in Canadian dollars, was $6,246,776.

Lily-Tulip Cup Profits Up

The Lily-Tulip Cup Corporation and subsidiaries for the twelve months ended September 30, report on estimated net profit before $100,000 deduction for contingencies, $733,572, equal to $3.87 a common share. Federal normal income tax and surtax was $341,197 and excess profits tax was $992,205 after deduction of 10 per cent post-war credit. Net profit for twelve months ended September 30, 1941, was $686,318, or $3.62 a share, after Federal normal income tax and surtax of $304,066 and excess profits tax of $383,822.

National Paper & Type Nets $5.13

The National Paper and Type Company and subsidiaries for the year to August 31, reports a net profit of $367,583, equal, after preferred dividend requirements, to $5.13 each on 64,392 common shares, against $183,678, or $2.27 a common share, in preceding fiscal year.

Champion Sells Bonds

The Champion Paper and Fibre Company has announced that it has sold to institutional investors $11,000,000 of its 3¾% first mortgage bonds,

Shrine of GOOD WILL

Standing as it does between two great countries whose friendship has never been questioned, Niagara Falls is a perpetual reminder of the fact that nations can live and prosper side by side in peace and mutual respect. The beauty of this fact is commensurate with the beauty of the Falls themselves. So, Niagara today is considered by the people of the Americas as a shrine of good will ... a constant expression of the desire of free men to respect the freedom of others.

So in the light of events, Niagara has become more than a scenic wonder... more than a trysting place of sentiment and romance... more, indeed, than a source of dynamic power in a power-driven age. It is a symbol of the simple, fundamental truths by which men and nations can live together—living proof that world democracy can be a basis for world peace.

We who work within sight and sound of Niagara Falls are devoting every ounce of our energies and facilities to speeding the flow of chemicals for Victory.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
LIQUID CHLORINE

EBG **Niagara ALKALI COMPANY**

60 EAST 42nd STREET, NEW YORK, N. Y.

due in 1957. The sale was arranged by W. E. Hutton & Co. and Goldman, Sachs & Co. The company will use the proceeds to retire its 4¾% debentures, due in 1950, outstanding in the amount of $8,020,000, and for general corporate purposes. The 4¾'s have been called for redemption on Dec. 5 at 104 for those issued in 1935 and at 102 for those issued in 1938.

I. P. Reports $1,214,097 Profit

R. J. Cullen, president, in submitting the statement of consolidated profit and loss of the International Paper Company and subsidiary companies for the third quarter and first nine months of 1942 and of International Paper and Power Companies and subsidiaries for the corresponding periods of 1941, stated as follows: "Net profit earned during the third quarter of 1942 amounted to $1,214,097 before post war excess profits tax credits and to $1,427,045 after such credits. These figures are computed after setting up income and excess profits taxes for the quarter at the rates in the new Federal Reserve Act and $200,000 a month for special obsolescence reserves.

"Curtailment of paper mill operations already ordered by the WPB and the statement that further curtailment would have to be made in the near future have made it necessary to reconsider the question of obsolescence at certain of the older paper mills. Under the circumstances it has been decided to reinstate, retroactive to January 1, 1942, provision for special obsolescence reserve at the rate of $200,000 a month.

"The company's liability for taxes based on income during the first six months of 1942 has been recalculated on the basis of the Federal Revenue Act of 1942, indicating that the amount provided in our accounts during this period was $2,377,043 greater than required. Of this total $1,568,865 represents the post war excess profits tax credit.

"After making these adjustments, net profit for the first nine months of 1942 amounted to $5,462,257 before the post war excess profits tax credits and to $7,244,070 after such credits." Statement of consolidated profit and loss is presented below.

Paraffine Profits Off

Paraffine Companies, Inc., for the September quarter, reports a net income of $385,380, equal, after preferred dividend requirements to 76 cents each on 476,062 common shares, against $494,610, or 99 cents a common share, for quarter ended September 30, 1941.

Continental-Diamond Loses

The Continental-Diamond Fibre Co. for the nine months ended September 30, 1942, reports a net income of $334,653, or 74 cents a share; for like 1941 period, net income $592,934, or $1.32 a share.

I. P. STATEMENT OF CONSOLIDATED PROFIT AND LOSS

	Three Months ended September 30, 1942	Three Months ended September 30, 1941	Nine Months ended September 30, 1942 *	Nine Months ended September 30, 1941
SALES AND OTHER INCOME:				
Gross sales, less returns, allowances and discounts	$44,821,197.61	$57,921,237.01	$160,051,442.62	$151,758,327.92
Other income—net	1,067,166.45	838,642.12	3,189,244.18	2,167,850.81
	$45,888,364.06	$58,759,879.13	$163,240,686.80	$153,926,178.73
COST AND EXPENSES:				
Cost of sales:				
Pulpwood, labor, materials, etc.	$25,857,007.42	$29,884,300.09	$86,157,024.32	$79,138,942.58
Maintenance and repairs	3,162,018.84	3,188,242.20	9,495,273.07	8,150,322.97
Taxes (other than income taxes)	1,018,937.11	1,120,916.27	3,028,942.99	2,826,734.95
Outward freight and delivery expenses	5,467,083.34	7,076,776.36	18,228,603.94	19,057,403.67
Selling, general and administrative expenses	1,725,352.69	1,935,848.03	5,374,134.71	5,521,915.86
Provision for doubtful accounts	179,857.39	171,928.35	539,495.96	502,226.16
	37,410,256.79	43,378,011.30	122,823,474.99	115,197,546.19
	$8,478,107.27	$15,381,867.83	$40,417,211.81	$38,728,632.54
DEDUCTIONS:				
Interest on funded debt	$663,836.29	$734,925.95	$2,049,556.06	$2,171,506.53
Interest on other debt	13,994.62	2,660.50	20,068.65	6,088.81
Amortization of debt discount and expense	71,717.43	62,913.24	198,891.38	241,991.35
Depreciation and obsolescence	3,382,833.42	2,714,626.80	9,967,678.30*	8,139,688.03
Depletion	198,372.16	267,021.18	611,114.15	704,184.47
Dividends on preferred stocks of subsidiaries	1,733.75	14,393.24	5,201.25	43,282.49
	4,332,487.67	3,796,540.91	12,852,509.79	11,306,741.68
NET PROFIT BEFORE TAXES BASED ON INCOME	$4,145,619.60	$11,585,326.92	$27,564,702.02	$27,421,890.86
LESS: PROVISION FOR TAXES BASED ON INCOME:				
U. S. Federal taxes:				
Normal	$1,047,658.00	$1,313,064.46	$3,142,690.00*	$3,294,893.74
Excess profits	1,672,855.00	4,812,984.00	17,361,503.00*	10,350,079.00
State taxes	39,096.00	334,197.00	312,688.00*	749,751.00
Canadian and other foreign taxes	171,913.67	803,191.53	1,285,563.88	1,514,648.20
	2,931,522.67	7,263,436.99	22,102,444.88	15,909,371.94
NET PROFIT BEFORE POST WAR EXCESS TAX CREDIT	$1,214,096.93	$4,321,889.93	$5,462,257.14	$11,512,518.92
ADD: POST WAR EXCESS PROFITS TAX CREDIT:				
U. S. Federal	$167,285.00	$ —	$1,736,150.00*	$ —
Canadian	45,663.43	—	45,663.43	—
	212,948.43	—	1,781,813.43	—
NET PROFIT**	$1,427,045.36	$4,321,889.93	$7,244,070.57*	$11,512,518.92

* After giving effect to adjustments applicable to the first six months as follows:

(a) Excess provision for taxes	$808,178
Plus: Post war excess profits tax credit	1,568,865
Total excess tax provision	$2,377,043
(b) Additional provisions for obsolescence	*1,200,000*
Net increase first six months	$1,177,043

** The above statements are subject to audit and final adjustment on December 31, (end of fiscal year).

CONSTRUCTION NEWS

Under limitations order L-41 all projects involving expenditures of more than $5,000 must be specifically approved by the War Productions Board. The status of projects reported herewith under the provisions of the order is not known.—EDITOR.

Philadelphia, Pa.—The Barrett Company, Margaret and Bermuda streets, manufacturer of prepared roofing products, coal tar specialties, etc., has completed plans for new addition to plant. Erection contract has been awarded to the Lauter Construction Company, Otis Building, Philadelphia, and work will be placed under way at once.

New York, N. Y.—L. Getraer & Co., Inc., 136 West 22nd street, commercial paper products, has arranged for purchase of six-story building at 15 Frankfort street. The structure is 32 x 100 feet, and was formerly used for a printing plant. Purchasing company will take over at early date and will occupy for company headquarters, storage and distribution. Large increased facilities will be provided at new location.

Webster, Mass.—Fire recently damaged a portion of building at Webster, occupied in part by Worcester Paper Box Company, manufacturer of paper boxes and containers. No estimate of damage has been announced. The loss will be replaced.

Cambridge, Mass.—The Cambridge Paper Box Company, 196 Broadway, manufacturer of paper boxes and containers, will have superstructure under way soon for proposed new addition to plant, one-story, about 44 x 64 feet, recently referred to in these columns. It will be used for storage and distribution. Albert F. Finethy, 58 Mishawan road, Woburn, Mass., has the general erection contract.

Chicago, Ill.—The United Wall Paper Factories, Inc., Illinois Mills Division, 3330 West Fillmore street, manufacturer of wall paper stocks, has arranged for lease of space in Simmons Building, 2650 West Roosevelt road, totaling about 27,000 square feet of floor, and will use for expansion in storage and distributing division. Possession will be taken at once.

Baltimore, Md. — The Baltimore Paper Box Company, 1300 Covington street, manufacturer of corrugated paper boxes and containers, is having plans prepared for alterations and improvements in a building on Key Highway, used for storage and distribution, including rebuilding portion of structure recently damaged by fire. No estimate of cost announced. Crout, Snyder & Crandall, 20 East Lexington street, Baltimore, are architects.

Chicago, Ill.—The United States Gypsum Company, 300 West Adams street, manufacturer of wood pulp insulating board, wall board specialties, etc., is maintaining production at its various mills in different parts of the country on a capacity schedule, and expects to hold to this basis for an indefinite period, or as long as labor conditions will allow. Over 80 per cent of the production at different mills is being used by the army and navy in connection with the war program.

Milwaukee, Wis.—The Milwaukee Lace Paper Company, 1306 East Meinecke avenue, manufacturer of lace papers and kindred paper goods, is completing the erection of new addition to plant, previously referred to in these columns, and expects to have the structure ready for occupancy at early date. It will be one-story, about 70 x 120 feet, and will provide for considerable increase in present capacity. Miscellaneous contracts are now being awarded for finishing work, including painting, etc. Cost is reported over $50,000, with equipment. Charles F. Smith, 717 North 65th street, Wauwatosa, near Milwaukee, is architect.

Michigan City, Ind.—Adhesive Tapes, Inc., 52 East Sixth street, manufacturer of gummed paper and other adhesive specialties, has plans maturing for new one-story addition, to be about 36 x 85 feet. No estimate of cost announced. It is expected to award general erection contract at early date. S. P. Boonstra, 622 Franklin street, Michigan City, is architect.

Los Angeles, Cal.—The Pacific Junk Company, 2416 East 24th street, waste paper goods, etc., has plans nearing completion for new two-story addition for expansion in storage and distribution facilities. It will approximate 8000 square feet of floor space, and is reported to cost close to $20,000, with equipment. It is expected to begin erection at early date. J. J. Rees Engineering Company, 253 South Broadway, Los Angeles, is engineer.

Saving in Cross-Hauling

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 9, 1942 — Large savings in the elimination of cross-hauling by railroads and trucks have already been achieved by several industries working voluntarily in cooperation with industry branches of WPB, Director Eastman of the Office of Defense Transportation, stated at a recent press conference. It was indicated that through voluntary cooperation, results along these lines have already been achieved in the paper and pulp industry, resulting in considerable savings.

Mr. Eastman, at the press conference, said that his organization has established close cooperation with WPB on the matter and while ODT has not yet been asked to implement the voluntary set-up with a formal order, he suggested such a request may come later.

It is Mr. Eastman's view that cross-hauling is not a matter that can be controlled from the transportation phase alone, because it involves plant facilities, raw material supplies, manpower, etc. In the cooperation between WPB and ODT which has been set up, ODT supplies WPB with traffic charts used by WPB industry committees and studies of what might be accomplished by specific industries.

Indianapolis Demand Improves

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., November 9, 1942—For no particular reason the trade knows, business in most all lines was better last week. Generally it is believed most of the buying was because of an increasing fear of shortages, but some of it was to replace inventories which had been allowed to decline during the late summer and early fall. Prices were firm in all items.

Paper box factories in this section continue working practically to capacity. Most of the output is going directly to defense factories for shipping purposes. Bakers of waxed containers, however, are not working to capacity production largely because much of their output goes to dairy and other industries and business is somewhat off.

Tissues moved well last week as did all grades of kraft. Waxed paper demand continued fair, but apparently was not as heavy as it has been. Jobbers are buying, however, readily or as much as is available to them.

Newsprint demand continued good, but there is apprehension on the part of larger publishers that print will become more unavailable as winter goes on. Increases in domestic lineage has offset to a large extent the loss in national advertising from industries which have been turned from normal production into defense work.

Building paper continued to drag, the same being true of roofing. New construction in this area is far behind last year, largely due to the stoppage of construction on better priced houses.

While no price changes were reported in the rag market, there was more activity in better grade rags last week. Mill demand increased on better grades, but other grades moved about as usual.

In the paper stock field, local warehouses are well stocked and paying prices are low. Mill demand last week was light. Local executives say the continued campaigns to conserve scrap steel and tin have reacted also on the paper collections here.

Classified Directory of Chemists

The Association of Consulting Chemists and Chemical Engineers, Inc., 50 East 41st street, New York, has issued the seventh, 1942-1943, edition of its Classified Directory.

This publication for the association, which serves as "a clearing house for consultants," is conveniently divided into three parts: (1) an alphabetical membership list, (2) one-page statements from each member, describing his and his organization's qualifications, activities, etc., and (3), a record of the work handled by the members, with information on their specialized training and experience.

A key sheet is provided, with headings covering all important fields of chemical activity, which enables any one desiring a consultant to select the one best suited for his problem. The directory should, therefore, prove of considerable value to all interested in locating consulting chemists and chemical engineers.

HOW TO TURN REJECTS INTO DOLLARS
ARMY E NAVY
AWARDED BAUER BROS. SEPT. 4 1942
FOR VICTORY BUY UNITED STATES WAR SAVINGS BONDS AND STAMPS
Stock ordinarily thrown away becomes valuable, high test saleable paper when processed by the Bauer double-disc pulper. Here is salvage point number one for mills planning ways to cut costs without sacrificing freeness, tear tensile, or mullen. Full details on request for your assistance in post-war planning. The Bauer Bros. Co., Springfield, Ohio.
BAUER double-disc PULPERS
SAVE SCRAP
The BAUER BROS. CO.
SPRINGFIELD, OHIO

Government Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1942—The Government Printing Office announced the following awards for paper: Barton, Duer & Koch Paper Company will furnish 94,450 pounds of 50% rag white index paper at 9.62 cents per pound; also 33,150 pounds of 50% rag buff index paper at 10.22 cents per pound; and 43,100 pounds of 50% rag green index paper at 10.22 cents per pound.

R. P. Andrews Paper Company will furnish 100,000 pounds of supercalendered book paper at 5.44 cents per pound; also 600,000 pounds of supercalendered book paper at $5.44 per cwt.; American Pulp and Paper Corporation will furnish 272,700 pounds of yellow sulphite writing paper at 6 cents per pound.

Cauthorne Paper Company will furnish 80,500 pounds of 25% rag white ledger paper at 9.95 cents per pound; Perkins-Goodwin Company will furnish 40,000 pounds of rope manila paper at 18.5 cents per pound; and the latter will also furnish 21,800 pounds of drumhead manila paper at 19.5 cents per pound.

Paper Corporation of U. S. will furnish 690,000 pounds of white offset book paper at 5.86 cents per pound; Barton, Duer & Koch will furnish 15,080 sheets of white cloth line paper at $214.99 per thousand sheets; Stanford Paper Company will furnish 25,000 sheets of 4-ply white railroad board for $1,150.00; Mudge Paper Company will furnish 23,400 pounds of 25% rag white ledger paper at 9.97 cents per pound; and also the Mudge Company will furnish 34,500 pounds of 25% rag white ledger paper at 9.97 cents per pound.

Collins Manufacturing Company will furnish 25,600 pounds of 25% rag white ledger paper at $9.945 per cwt.; also 23,400 pounds of 25% rag yellow ledger paper at $10.195 per cwt.; Wilcox - Walter - Furlong Paper Company will furnish 100,000 pounds of white sulphite writing paper at $5.14 per cwt.; Cauthorne Paper Company will furnish 9,800 pounds of white antique book at 6.95 cents per pound; Marquette Paper Corp. will furnish 71,760 pounds of white offset paper at 6.94 cents per pounds; and Wilcox-Walter-Furlong Paper Company will furnish 2,000,000 pounds of chemical wood manila paper at $4.125 per cwt.

Cauthorne Paper Company will furnish 9,200 pounds of yellow sulphite manifold at 9.25 cents per pound; and R. P. Andrews Paper Company will furnish 103,500 pounds of offset book paper at 6.02 cents per pound; Marquette Paper Corporation will furnish 4,913 pounds of white offset paper at 7 cents per pound; and North American Pulp & Paper Corporation will furnish 138,690 pounds of white sulphite bond paper at 6.5 cents per pound.

Barton, Duer & Koch will furnish 292,500 pounds of white sulphite writing paper at 5.72 cents per pound; R. P. Andrews will furnish 491,000 pounds of white supercalendered book paper at 5.44 cents per pound; Stanford Paper Company will furnish 47,400 pounds of white offset book paper at 6.4 cents per pound; Cauthorne Paper Company will furnish 12,586 pounds of 25% rag yellow bond paper at 12.5 cents per pound; and Walker - Goulard - Plehn Co. will furnish 1,183 pounds of green bristol board at 9 cents per pound.

Marquette Paper Corporation will furnish 24,266 pounds of tan bristol cover paper at 10.6 cents per pound; 18,081 pounds of yellow sulphite writing paper at 7.06 cents per pound will be furnished by R. P. Andrews Paper Company; Cauthorne Paper Company will furnish 5,606 pounds of 50% rag white ledger paper at 14 cents per pound; Stanford Paper Company will furnish 500,000 pounds of supercalendered book paper at 5.44 cents per pound.

Walker-Goulard-Plehn will furnish 57,500 pounds of pink sulphite writing paper at 6.38 cents per pound; also 256,000 pounds of yellow sulphite writing paper at 6.38 cents per pound; and 200,000 pounds of white sulphite writing paper at 5.14 cents per pound.

Eastern Corporation will furnish 717,500 pounds of white sulphite writing paper at 5.70 cents per pound; Barton, Duer and Koch will furnish 13,300 pounds of white sulphite writing paper at 5.9 cents per pound; and R. P. Andrews Paper Company will furnish 292,000 pounds of white sulphite writing paper at 5.72 cents per pound.

R. P. Andrews Paper Company will furnish 226,109 pounds of white offset paper at 6.87 cents per pound; D. L. Ward Paper Company will furnish 52,258 pounds of yellow sulphite writing paper at $6.39 per cwt.; Whitaker Paper Company will furnish 199,092 pounds of white sulphite writing paper at 5.72 cents per pound; and D. L. Ward Company will furnish 5,776 lbs of white manifold at 9 cents per pound.

Marquette Paper Corporation will furnish 40,127 pounds of white offset book paper at 6.52 cents per pound; also 300,000 pounds of supercalendered book paper at 5.23 cents per pound; also 192,000 pounds of supercalendered book paper at 5.58 cents per pound; and 100,000 pounds of white sulphite writing paper at 6.6 cents per pound.

Barton, Duer & Koch will furnish 360,000 pounds of white sulphite writing paper at 5.72 cents per pound; D. L. Ward Company will furnish 115,000 pounds of canary sulphite writing paper at 6.375 cents per pound; Barton, Duer and Koch Paper Company will furnish 52,863 pounds of white sulphite writing paper at 5.72 cents per pound; and Marquette Paper Corporation will furnish 245,000 pounds of white sulphite writing paper at 5.61 cents per pound.

NEW LaMOTTE MICRO pH TESTING SET

A micro unit for pH determinations with facilities never before offered in the colorimetric system.

pH range of standard unit 5.2 to 8.4.

Requires less than 0.5 cc. sample. Accuracy ± 0.1 pH.

Turbidity and color in sample does not affect result.

Full information will be sent on request.

LaMotte Chemical Products Co.

The Pioneers in the Practical Application of pH Control

Dept. PT Towson, Baltimore, Md.

Pacific TAPPI Discusses Maintenance

The Pacific Section of the Technical Association of the Pulp and Paper Industry held its regular monthly meeting at the Crown Willamette Inn, Camas, Wash., on November 3, 1942.

Frank K. Zanniker, Supervisor, Welding Department, Crown Zellerbach Corporation, presented a paper entitled "Industrial Welding in the Paper Industry as Applied to Beater Lifting Tackle." Mr. Zanniker discussed the difficulty involved in securing new cast metal beater lifting tackle and described in detail the method developed at the West Linn mill for fabricating such equipment by welded steel construction. He gave cost figures showing the substantial savings in time and money of the welded steel construction.

A. B. Thomander, Westinghouse Electric and Manufacturing Co., presented a paper entitled "Micarta—A Substitute for Critical Materials." He explained in detail the many places where Micarta can be substituted for critical materials in the pulp and paper industry. Mr. Thomander's paper was followed by an interesting discussion period.

Concluding the program, R. W. Griffin of the B. F. Goodrich Company presented a sound film entitled "Keep 'Em Rolling". Mr. Griffin explained the development and manufacture of synthetic rubber and the film which followed emphasized the importance of the synthetic rubber program to American industry.

The next meeting of Pacific Section TAPPI will be held at Longview, Wash., Jan. 5, 1943.

Among those present were: E. R. Barrett, Chester T. Beals, Geo. H. Beisse, W. S. Boutwell, Richard S. Buckley, Robley Butler, Arthur J. Chaput, W. E. Damon, T. E. Dear, Harold A. Deery, O. T. Defieux, V. S. Denison, C. A. Enghouse, A. E. Erickson, M. M. Ewell, B. W. Farnes, L. E. Fear, Francis W. Flynn, G. H. Gallaway, T. H. Grant, Robert W. Griffin, J. A. Harris, E. J. Hinde, W. F. Helzer, Otto L. Hudrlik, Henry Jacobsen, Wm. Kelly, O. Kiphart, Myron A. Knudson, Harold Lange, C. J. McAllister, Margaret McConahey, G. H. McGregor, F. D. McGillicuddy, Jr., Robert W. Martig, Beverly Matthews, O. P. Morgan, Otto Michaelis, H. Norman Miller, A. G. Natwick, M. E. Norwood, Edward H. Nunn, Louis Ostenson, J. C. Plankinton, W. B. Porter, Albert S. Quinn, A. P. Ratcliff, Jr., E. D. Rich, H. H. Richmond, Harlan Scott, D. L. Shirley, C. Sholdebrand, Ray Smythe, Bert E. Sullivan, A. B. Thomander, W. E. Thorp, R. M. True, Leona Van Arnam, H. J. Wagner, J. W. Wenger, Peter M. Wilkie, Albert Wilson, F. K. Zanniker, Herbert Wymore, Edward P. Wood and Geo. Wolfe.

$650.00 Prizes in War Bonds

In the interest of industrial conservation, and to help speed war production, Metallizing Engineering Co., Inc. is offering a total of $650.00 in War Bonds for details of maintenance and salvage procedures with the metal spraying process. First Prize is $250.00, Second Prize $150.00, Third Prize $100.00, and three prizes of $50.00 each. Contest closes December 15th. Complete information and entry forms obtainable from Metco News, 21-07 41st avenue, Long Island City, N. Y.

sonoco cores
can take it

RHINO NON-RETURNABLE

For all uses requiring an extremely tough non-returnable paper mill core.

TAYLOR ENDS

DURO—Standard returnable core of plus-standard quality. Shown with Taylor ends. Also available with Bermico ends.

BERMICO ENDS

ENDURO—Very high grade returnable core to meet extra demand for strength. Shown with Bermico ends—Taylor ends available.

BERMICO*

*Exclusive distributors for Bermico ends Bermico Fibre Cores

BERMICO—A returnable fibre core—extremely hard, strong and rugged. Treated to resist weather and moisture changes.

SONOCO PRODUCTS COMPANY
BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.
SHIPPING POINTS: LOWELL, MASS. HARTSVILLE, S. C.
DEPENDABLE SOURCE OF SUPPLY

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 115 November 12, 1942 No. 20

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

PAPER IS ESSENTIAL

The economic status of any industry and its essential character is practically and customarily evaluated by its contribution to the welfare of the nation. Paper and wood pulp in many forms are a modern necessity for civilian and for military uses. Their range of utility is wide and while numerous types of paper may be drastically limited in a war economy, many must be continued to be produced, unless the American standard of living is to be lowered to a very great and deplorable extent. The economic policy of the present Administration is not readily appraised, because it is not fully known. For example, definite or exact factual knowledge of the Administration's estimates of paper, or any other product or commodity, for probable use by the U. S. armed forces and lend-lease requirements, remains in substantial part a secret. The lack of public information has and still is the cause of controversial discussion. Few people have any real knowledge of what the policy of the Administration consists, its method of procedure and how extensively the United States is committed to supply the obvious enormous needs of England, Russia and other nations allied with us in the world conflict.

It is due to this lack of public information that the restrictive order of the War Production Board in closing three pulp mills in the Puget Sound area, and the initial step taken to reduce the general production of paper and pulp, gave rise to grave concern in the industry. The great size of the paper and pulp industry with its investment in equipment, land, and buildings of more than $1,000,000,000, makes its contribution to the economic welfare of the United States one of great importance. The industry also furnishes one of the most profitable basic markets for manufacturers of equipment used in paper and pulp mills, and in many types of converting plants, producing a very wide range of paper products.

In considering the size and contributions of the paper and pulp industry, the direct economic value of the mills as a means of support in the communities in which they are located, is neither as well nor as widely known as it should be. This aspect of the status of the industry has been well presented in a "Study of community dependency on the primary paper and pulp industry of the United States," just issued by the statistical department of the American Paper and Pulp Association. This copyrighted study "indicates by states, the relative dependency on the industry of town and cities in the country having primary paper and pulp mills. Converting has been included only in so far as it may be a part of the operations of a primary paper producer. In these critical days of war regulations and possible industry concentration, such basic information should prove timely and effective, especially in determining how far-reaching would be the economic and social effects of drastic curtailment or shutdowns in the industry."

In its summary, the study reveals that there are 969 mills in the primary paper and pulp industry, in 511 towns and cities, in 36 states and the District of Columbia, with a total 1940 population of 31,154,890. The total number of persons employed in the primary industry was estimated at 185,719 in May, 1942, upon which 913,038 were estimated to be dependent. The total number employed and dependent on the primary industry was estimated at 1,098,757 in May, 1942, which is equal to about 1 in every 130 persons in the country. The primary industry is concentrated in communities with a population under 50,000; 8% of the mills are in communities with under 500; 15% under 1,000; 44% under 5,000; 58% under 10,000, and 83% under 50,000. The heaviest concentration of the primary industry is in the population group of 1,000 to 5,000.

The study summarizes the community dependency groups as follows: 90-100% are dependent upon paper and pulp mills in 121 town and cities; 70-90% are dependent upon mills in 28 centers; 50-70% in 27 centers; 25-50% in 71 centers, and up to 29% in 264 towns and cities. Community dependency is tabulated for the towns and cities in the 36 paper and pulp producing states. In New York State, for example, 90-100% dependency is estimated for a total of 23 towns, with an aggregate population of 20,816, or 28% of the total mill towns; 70-90% dependency for 6 towns, with a total population of 14,625, or 7% of the total mills towns; 50-70% for 7 towns of 25,750 population, or 9% of the total mill towns; and up to 25% dependency for a total of 41 towns, with a total population of 8,534,815, or 51% of the total mill towns.

The comment of the association states in part that, "It is recognized that community dependency does not permit precise measurement. However, the indi-

cations of dependency as contained in this statistical study are sufficient for all practical purposes. Many communities adjacent to towns and cities having primary paper and pulp mills are more or less dependent upon these mills for their existence. For this reason curtailment or closure of units in the primary industry would have an effect beyond the communities analyzed in this study."

Thus, even the limited material in this analytical report cited, is sufficient to indicate the economic importance of the domestic paper and pulp industry. The study, in its entirety, effectively determines the relative status of the industry and is an important contribution "in emphasizing the effect of governmental action upon local state economies."

Industrial Production Indexes Lower

WASHINGTON, D. C., November 9, 1942—Industrial newsprint production index, using the 1935-39 average = 100 and adjusted for seasonal variation, was 106 for September, as compared with 108 for August, and 107 for September of the previous year, according to a report by the Federal Reserve Board.

Without seasonal adjustment the index for newsprint production in September was 106; for August, 105; and for September of last year, 107.

Other industrial production indexes of interest to the paper industry are as follows: adjusted for seasonal variation; paper and products, 131 for August, and 144 for September of 1941; paper board, 123 in September; 121 in August; and 158 for September a year ago.

Without seasonal variation, industrial production indexes for the same products, were for paper and its products, 130 for August and 149 for September a year earlier; paper board, 131 for September; 123 for August; and 167 for the previous September; and newsprint production, for September 106, for August, 105; and for September, 1941, 107.

Printing and publishing indexes, adjusted for seasonal variation were, for September, 107; for August, 110; and for September of 1941, 125. Without seasonal adjustment the printing and publishing indexes were, for September, 107; for August, 102; and for September of 1941, 125.

Newsprint consumption indexes, adjusted for seasonal variation were, for September, 101; for August, 108; and for September of 1941, 105. Without seasonal variation the indexes were for September, 102; for August, 95; and for September of 1941, 106.

OPA Licensing Control Extended

WASHINGTON, D. C., November 9, 1942—The uniform licensing control over all distributors of wood pulp, newsprint, kraft paper and other paper products, which was set up last month in Office of Price Administration Supplementary Order No. 19, was specifically written into three maximum price regulations in that field last week.

This action was taken as a cross-reference by Amendment No. 4 to Maximum Price Regulation 114, Woodpulp; Amendment No. 3 to Maximum Price Regulation 140, Sanitary Napkins; Amendment No. 2 to Maximum Price Regulation 182, Kraft Wrapping Papers and Certain Kraft Bag Papers.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1942		Corresponding Weeks—1941	
September 26	87.5	September 27	105.9
October 3	86.9	October 4	103.6
October 10	88.6	October 11	102.1
October 17	89.6	October 18	105.5
October 24	89.9	October 25	106.4
October 31 (Prelim.)	92.9	November 1	108.6

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1941	85.6	89.7	92.2	96.0	98.7	99.3	94.2
1942	104.5	103.9	102.9	100.4	95.3	87.3	75.8

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1941	101.0	99.7	105.2	106.2	100.4	97.4
1942	80.8	82.8	*90.2*	....	....	....

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941	1942
Year to Date.	69.3	79.2	84.7	70.7	81.3	86.1	96.2	*92.0*
Year Average.	69.9	80.4	79.8	71.5	83.4	85.6	97.4	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	83	89	89	91	88	80	69	77	72	70	57	47	75
1938	56	63	63	60	60	59	59	60	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	82	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	*75*	76	*81*	..	..	..

Week ending Sept. 26, 1942—78
Week ending Oct. 3, 1942—80
Week ending Oct. 10, 1942—80
Week ending Oct. 17, 1942—79
Week ending Oct. 24, 1942—81
Week ending Oct. 31, 1942—*84*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Paper Mills Busy on War Orders

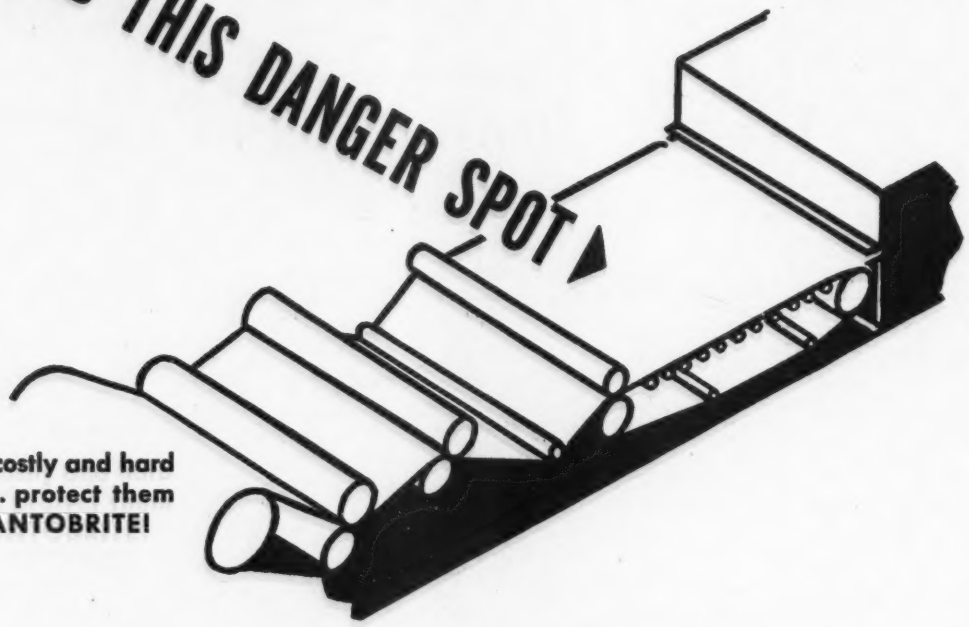
[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., November 9, 1942—Many of the paper mills in this section are running at capacity on war production with prospects of maintaining day and night schedules for some time. There is a shortage of skilled workers in some mills and the necessary help is being sought on an extensive scale.

Among the busiest mills hereabouts is the Wheeler Paper Corp. which is supplying the Navy with 90 per cent of its products. The plant is operating six days a week on a twenty-four hour schedule with the majority of the help on eight hour shifts. An official of the concern believes that women as factory employees have really saved the present situation because if they had not entered the breach many plants would be unable to keep up their production on defense orders. He also believes that in many cases after the war women workers will have made their positions essential in many factories and will therefore continue for a long time to come.

At the plant of the Eastern Tablet Company it is estimated that there are about 350 women war workers and this number is being gradually increased in order to meet the expanding production. The company sends a varied grade of paper products to the armed forces. Millions of paper drinking cups are being produced for the medical corps while pads, tablets and notebooks are being turned out on an extensive scale for the army and marine corps. Envelopes and other equipment are also being turned out on a wide scale for other plants. The places of many of the drafted male workers are now being filled by women and the majority are proving capable substitutes.

GUARD THIS DANGER SPOT



Felts are costly and hard to get . . . protect them with SANTOBRITE!

FOOD supply, moisture, air tension, temperature, chemical reaction —all the controlling factors are often just right for proteolytic bacteria in the felts of your paper machine. And as these bacteria grow . . . expensive, hard-to-get felts rot.

To guard *your* felts from this danger, treat them with Santobrite, Monsanto's highly effective bactericide and fungicide.

In several leading mills which had to change felts after only a few days' service, Santobrite treatment has extended useful felt life to *five or six weeks and even longer!* Yet the cost of Santobrite treatment is negligible.

Felts may be sprayed or run through a bath of 0.5 to 1.0% Santobrite solution during a shutdown . . . or continuous treatment may be provided for by a drip pipe extending across the width of the felts in the machine.

Chemically stable, non-corrosive to metals, non-volatile, practically odorless, Santobrite is ideally suited to the paper industry's need for an anti-slime treatment *effective throughout the mill* against *both* fungi and bacteria.

For experienced technical advice on how you can protect *your* machine felts—and your entire mill—from the ravages of bacteria and fungi, inquire: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, St. Louis, Missouri.

1 MONSANTO CHEMICALS SANTOBRITE FOR MICROORGANISM CONTROL

MONSANTO CHEMICALS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

AVAILABILITY

Supplies of the raw materials from which Santobrite is made are critical, and at present, priorities of A-1-K or better are required to assure delivery. This situation changes from month to month, however, so we suggest that you write or wire us for the latest information, stating fully the uses for which you require Santobrite, the types of paper you are manufacturing and any other pertinent data.

Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
Edited by R. G. Macdonald, Secretary

Power Teamwork for Victory*

By Phillip W. Swain [1]

War production depends primarily on materials, machines, men and power. At one time or another every one of these has been a limiting factor—except power. We believe that this sufficiency of power for war-time needs can be maintained through the next two years of supreme struggle on the military and industrial front, if power engineers will bend every energy to the task ahead.

But that will not be easy. Loads will grow too rapidly at inconvenient points. By War Production Board order, the electric utilities must make the best of a five million kilowatt expansion instead of the eight million originally planned. Service must somehow be maintained despite acute shortages of steel, copper, rubber and equipment. Key operating and maintenance men will be increasingly lost to the armed services. Yet present and projected capacity can carry the war load if it is utilized to the limit through cooperative action.

That cooperation is now in the making. Additional utility interconnections are pooling regional capacity to carry local overloads. Many industrials are getting set to pump power into the utility lines. Plans are being made to drop certain nonessential power loads in case of dire emergency. To an increasing degree adjacent plants (both industrial and utility) are pooling steam capacity to remedy the unbalancing of steam demands by the reorientations of wartime.

The same kind of cooperation will solve the difficult problem of fuel supply, now fundamentally one of jammed transportation. Essential power loads will get their fuel, but users must learn to burn the coal from short-haul mines, to order fuel in time and to store as necessary.

To a rapidly increasing extent unused power equipment, regardless of ownership, will be moved wherever needed to maintain essential operations. In the long run manpower, too, must be shared, so that available power-plant brains and brawn can cover the nation's essential needs.

That is the general picture, which we can now examine somewhat more closely.

War Power Must Come from Today's Plants

First consider the central stations: They are already carrying bigger loads for more hours than ever before in history—and those loads will increase. Yet electric power is the only strategic material that can still be bought in the open market without priority, or without the need to curtail civilian consumption. Nor has any war industry yet suffered serious curtailment of its operations through lack of adequate power.

Present indications are that future war loads can be met, but not without careful forecasting and planning. Moreover, we must soon work with margins of reserve that would be called unsafe in normal times.

All agree that the necessary pooling of generating capacity must be considered on a regional basis. In general, it is not practicable to feed one large geographical area from another across natural boundaries.

As of July 1, 1942, public supply sources had a total installed capacity of 45,337,000 kw. New installations during the first half of 1942 totaled about 1,300,000 kw., and will continue at about the same rate for the remainder of the year. By January 1 approximately 46,500,000 kw. will have to carry aggregate peak loads of about 37,500,000 kw., leaving an average reserve margin about equal to that of 1941.

New installations under way with the necessary priorities total about 5,300,000 kw. for operation before the end of 1943. (Some few of these plants will not start until 1944.) No further building is authorized so our national generating plant will climb to slightly over 50,000,000 kw. and stay there for the "duration," if plans are followed.

Except in the temporary water shortage in the southeast last year, curtailment of nonessential use and rationing has not been necessary, nor is curtailment in sight this year. Yet common sense dictates active preparation for emergency situations that *might occur* in individual power areas. The locations of new generating units have already been established by their allocation to critical areas. Beyond these, new machines can no longer be obtained to bolster weak spots. Moreover, to save materials, plans call for a minimum of new interconnections.

To prepare for pooling of generating capacity in their territories, utilities are ordered by WPB (Limitation Order L-94) to survey the areas served, list all industrial plants over 100 kw, establish the approximate number of kilowatts and kilowatt hours that might be available in the pool, and estimate what materials and labor interconnection would require.

Another part of the same order provides for a declaration of emergency within a definite geographical area when a shortage occurs or can be foreseen. After such declaration, operation of generating equip-

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Statler, Boston, Mass., Sept. 29-Oct. 1, 1942.

This paper is a high-spot summary of a 32-page special section appearing under the same title in September *Power*, 1942. Authors of original section were Editor Swain and Associate Editors Tucker, Annett and Rowley.

[1] Editor of *Power*, New York, N. Y.

ment can be dictated on the basis of maximum benefit to war production without considering the usual factors of cost or safe margins of reserve.

Utility Power Pools

The first step in maximum utilization has already been carried out in part. For more than twenty years the utilities have been building integrated systems with transmission ties. These have made the reserves of one plant or system available to others.

Unfortunately for war production, these systems have grown around existing centers of population with increasing industrial and residential demands. Strategic location of war industries inland and away from large cities now requires transportation of power from existing sources to new locations. Thus, every extension of aluminum and magnesium production has caused a local shortage of power. These plants present specific problems requiring local solution.

A general power shortage extending over an area of integrated systems is an entirely different matter. It affects operation of plants *within* the area rather than the construction of new feeder lines and interconnections.

Careful distinction must be made between a *kilowatt* shortage and a *kilowatt-hour* shortage. With a utility system supplied only by fuel-burning plants, or by hydro plants without water storage, the only kind of shortage to be considered is a shortage of kilowatt capacity at peak load. If the system's generating capacity is fixed the only cure in such cases is to move some of the load off the peak by shifting it to other hours or by cutting down nonessential power demands.

A generating system having hydro plants with water-shortage capacity may experience another kind of shortage—a shortage of kilowatt-hours. This applies also to fuel-burning plants if there is an actual shortage of fuel. In either case a reduction in consumption at any hour—whether on peak or off peak—is worth while because it prevents depletion of the critical supplies of stored water and fuel.

If the fuel-supply situation on the east coast should get critical this winter, it might create local kilowatt-hour shortages—or at least an incentive to reduce the consumption of energy at all times.

In the event of a kilowatt-hour shortage the War Production Board is specifically empowered to declare the limits of the area affected and restrict consumption of electrical energy for nonessential uses.

The emergency experience in the southeast indicates that a complete and well-thought-out publicity and advertising campaign on the part of the local utility company will produce an almost immediate reduction of from 5 to 20% in kilowatt-hour use.

Where the shortage is one of kilowatts (meaning generating capacity) rather than of kilowatt-hours the situation requires shifting loads from peak periods to other times of lower load demand—also importing power into affected area interconnecting with excess industrial plant capacity and so on. While potential shortages of generating capacity exist in many areas where new war production plants have been built none are expected to reach the acute stage in 1942.

Survey of Nonutility Plants

As already explained, the power division of WPB will shortly have records of every industrial, institutional and other special-purpose generating plant of more than 100 kw. The job of gathering this information has been placed on the public utility, whose men are now searching their own territories for unused or partly used generating equipment in industrial plants, hospitals, hotels, etc. Thus WPB will soon know how many kilowatts and kilowatt-hours could be spared from normal requirements for pooling in each area. At the same time they will gather information as to the equipment and repairs required to operate the individual plants at full capacity and make the power so generated available to transmission and distribution facilities.

No immediate nationwide wave of interconnection will follow the tabulation of these data. There is no incentive to allocate precious copper and other material to areas that now have adequate power supply. However, this survey will save waste motion in selecting plants for which interconnection is practical and economical in an emergency.

A preliminary survey made by Edison Electric Institute indicates that something like 3,000,000 kw. of nonutility reserve generator capacity might be available from complete pooling, insofar as is practical, of all isolated installations in the country. In such studies all plants under 100 kw., all dc. generation, and all plants of disproportionately high cost are eliminated.

There are other practical limitations on interconnection. Some plants with old or inefficient equipment may not be able to run at full load. Others may need all their capacity for war production on the spot. Deficiency in boiler capacity or fuel supply may limit maximum output. Needed repairs and lack of parts or skilled labor may prevent full utilization of nominal plant capacity.

For feasible interconnections rough estimates of cost for transformers, switches and accessories average less than $20 per kilowatt.

Industrial Plants Share Responsibility

Joint operation of industrial and utility generators is an old story to many power men, but most existing interconnections were made primarily for economic reasons. Today the incentive comes from the power needs of the war effort.

Existing power pools include one near Chicago involving many of the steel mills and all of the utilities in that area, and a similar pool of steel mills in Pittsburgh. Several large paper companies with interchange arrangements have swapped both steam and kilowatt-hours between plants and with utility stations for years.

It is hoped that some of the interconnections made to meet present emergency conditions may justify post-war continuance on economic grounds.

It should be noted here that temporary interconnection with a utility does not involve a *bona fide* industrial power plant in the maze of government regulations under which the utilities normally must operate.

Those who purchase power in amounts over 2500 kw.-hr. per week, or who have a demand over 50 kw. are subject to curtailment if necessary in power-shortage areas. Depending on the degree of severity of the shortage, large users will then be rationed at a fixed percentage of their present consumption, both kilowatt-hours and peak kilowatts.

Technical Requirements of Interconnection

Tieing an industrial power plant to a utility system involves a lot more than installing transformers and

connecting a few wires. In fact the technicalities involved in a correct tie are rather complex as evidenced by the fact that the section of which this paper is a summary devotes 11 printed pages to some of the electrical and mechanical details involved.

Obviously these matters must be turned over to the electrical specialist; no attempt will be made to cover them here. However it may be noted in passing that interconnection requires that the industrial plant at all times supply its share of the load. It can no longer operate just to supply the consumption of its own factory. This load control may be by hand according to a schedule, or it may be automatic.

The mere fact that the industrial plant is tied to the utility system greatly increases the importance of protecting equipment and circuits against overload, short circuits, grounds and similar faults. This often requires installing more adequate circuit breakers, relays, etc.

Power pooling also requires metering arrangements to give a proper record of kilowatt hours, kilowatt demand and power factor.

Trading Steam "Creates" Boiler Capacity

Too often discussions of power supply look upon steam wholly as a means of producing electricity. The error will be obvious to any paper-mill engineer and also to anyone who knows that American industry consumes 50% more steam for process and heating than do all the central stations for electrical generation.

Aside from district steam systems, the typical steam pool rarely extends more than a few hundred feet—that is, from one plant to the one alongside. The wartime advantage of steam pooling springs not from dollar savings, but from the creation of the equivalent of new boiler capacity without actually tapping the manufacturing capacity of boiler factories and steel mills. Long steam connections are avoided, again not for cost reasons, but because steel for piping and supports is scarce.

Every new or extended war production plant represents expanded steam demand. Meanwhile, a new excess steam supply will arise in the plant of the "nonessential-goods" producer who cannot fully convert his factory to war production. A steam connection to a neighboring war production plant may give him a market both for his excess boiler capacity and his engineering manpower.

Both in peace and war the exchange of steam between plants is frequently dictated by the availability of excess waste or byproduct fuel. Outstanding examples are found in the west coast lumber mills whose huge output of sawdust and hog fuel generally far exceeds the fuel demands of the mills. That means either fuel or steam for sale. A case in point is a lumber mill in the state of Washington that furnishes steam to a local gas plant.

Emergency Coal Storage

The present major fuel-oil shortage area lies along the Atlantic seaboard, but the middle west is affected to a lesser extent. The diversion of tankers to avoid submarine attack and to handle immense transoceanic fuel shipments has reduced the water-borne shipment of oil to the east coast from about 95% of the total to practically zero. Tank cars, borrowed from the midwest, are now trying to keep the east supplied with liquid fuel.

Gas and oil rationing to domestic consumers will not take care of the deficit in transportation. Power engineers, too, must cooperate by converting to coal wherever possible. Coal handlings and firing devices must be as simple as possible because of shortages in metals and equipment. Meanwhile operators forced to continue burning oil must make the best possible use of the fuel allotted to them.

Coal storage has become a matter of major importance. Every engineer in the east should learn the new tricks in this trade.

For the present the fuel difficulty is purely one of shipping facilities, rather than of production. There's still plenty of oil and coal at the oil wells, refineries and coal mines, although this condition may not last throughout the war.

Swapping Supplies and Equipment

Thousands of plants have stocks of used and unused parts—valves, fittings, pipes, boiler tubes, shafts, pulleys, gages, etc.—some of which may not be needed on the spot in the near future. As the war proceeds such items, as well as major units, will be pooled for the common good. Already, there have been many examples of pooling and swapping.

For example, an industrial plant was about to shut down because it could not obtain immediately certain spare parts for a traveling grate stoker. A paper mill in a neighboring city sold this plant its spare stoker parts to tide over the emergency.

A check made by *Power* in the middle of July showed that the surplus used equipment section of the War Production Board had at that time located, and indexed in suitable form for allocation, a substantial volume of power equipment, including 20,000 motors, 3,000 boilers, 1,000 engine generators, 400 turbine generators, 300 motor generators, 250 diesel generators, 1,000 generators, 300 steam turbines, 150 diesel engines, 200 steam engines, 100 gas engines. 400 rotary converters, and 500 miscellaneous pieces of equipment.

Pooling Manpower

The employment picture in this country is being revolutionized almost over night. When the Japs struck at Pearl Harbor about 6,000,000 Americans were employed in war activities, including war plants and transportation, power production and governmental employment directly connected with the war. On Jan. 1, 1942, the figure was 7,000,000; on April 1, 9,000,000; on July 1, 12,500,000. In the last half of 1942 we are adding another 5,000,000 according to Chairman Paul V. McNutt of the War Manpower Commission.

The impact of these vast forced migrations are beginning to be felt and will become profoundly disturbing to all of us in a few months. No business or industry will escape unscathed.

Power plants, both utility and industrial, must prepare to share these shortages—to let go men who have been considered essential—to hire and train others who might seem to have less than the minimum requirements for critically important jobs. And the power plant, too, must prepare to lend key men to the neighboring power plant to tide over some emergency.

All this means that power executives everywhere must break away from lifelong habits and adjust their procedures to the requirements of war.

Commenting on the situation, the steam superintendent of a large Canadian paper mill said that employers became too choosey in the days when the

workers' market was overcrowded. He continued. "All that is changing, and there is no reason at all why hundreds of jobs cannot be handled by men rejected by military service, or men over the age limit."

An outstanding example of training inexperienced men to handle real responsibilities is furnished by the Masonite Corp., Laurel, Miss. This company put into operation a new 13,500-kw., 410 p.s.i. power plant with an operating crew most of whom had had little or no power plant experience. Troubles were few.

Plant engineer E. G. Grady observed: "A person with no previous experience with modern equipment, but who has a normal intelligence and is receptive to instruction, can be made a satisfactory operator faster than one who has learned the older manner of operating."

Probably this is true, but it certainly assumes a very high calibre of management and much skill in the art of training men. The time has arrived when every chief power engineer must be, among other things, a real teacher.

Packaging Institute Meets

The Packaging Institute met at the New Yorker Hotel on November 5-6, 1942. The Institute is a merger of the Production Managers Association and the Packaging Machinery Manufacturing Institute.

On Thursday, November 5, Joel Y. Lund, vice president of the Lambert Pharmacal Company, St. Louis, Mo., gave a talk on "The Wartime Packaging Picture." Clifton Cox of the War Manpower Commission, Newark, N. J., talked on "Greater Quantities of Quality Products in Less Time." This paper outlined the advisability of having a training program to gain greater labor efficiency and to cut down waste. Ellen M. Davies, Personnel Manager, Chase Brass & Copper Company, Waterbury, Conn., discussed "Women in Industry." This talk dealt with selection, training, induction, plant procedures, plant facilities, upgrading, wage scales, etc.

On Thursday afternoon the Government Viewpoint on Packaging was handled by a panel consisting of Charles L. Sheldon, Chief of the Containers Branch, W. P. B., assisted by Robert S. Solinsky (Metal Can and Tube Branch), W. W. Fitzhugh (Deputy Chief), E. F. Tomiska (Fibre, Wood and Fabric Section), Julian E. Toulouse (Consultant), Charles Dailey (Steel Drums, Cooperage and Tight Drums Section), Philip S. Hardy (Glass Containers Section), and F. R. Kelly (Folding and Set-up Box Section). This was a question and answer session devoted to the priorities and allocation problems relating to containers.

On Friday morning three separate sessions were held. Charles L. Barr, Vice President of F. B. Reddington Company, Chicago, Ill., led a discussion on Packaging Machinery. This dealt with new equipment for essential industries, machinery for use for substitute materials, priorities on machinery for food and the post war packaging machinery picture.

William M. Briston, Vice President, Bristol-Myers Company, Hillside, N. J., led a discussion on "What About Civilian Merchandise?" This dealth largely with labor and insurance problems.

Christopher W. Browne, Editor of *Modern Packaging*, led a discussion on "Closures." Mr. Browne was assisted by a panel of experts who answered questions on availability of materials and experience with new closures.

On Friday afternoon there was an open forum on Packaging and the Problem of Feeding America. This was led by Hal W. Johnston, vice president of the Stecher-Traung Lithograph Corporation, Rochester, N. Y. A group of experts represented the U. S. Department of Agriculture, Glass Container Association, Folding Box Association, Can Manufacturers Institute, National Canners Association and the Research Committee of the Packaging Institute. Questions were discussed relating to food packaging.

A feature of the meeting was an exhibit by Arthur S. Allen, color engineer, who displayed a large number of new cartons.

Delaware Discusses Melamine Resins

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry held its regular monthly meeting at the Engineers Club, Philadelphia, Pa., on November 6, 1942.

C. S. Maxwell of the American Cyanamid and Chemical Corporation, discussed the use of melamine formaldehyde resins for the development of wet strength. Folding endurance and bursting strength are increased as well as wet tensile and rub.

Among those present were: Edward J. Albert, R. E. Bare, Roger W. Beales, H. L. Becher, A. L. M. Bixler, Earl L. Bosch, Alan R. Boyd, S. G. Bratton, F W. Brainern, K. W. Britt, Richard T. Bingham, William J. Burke, C. W. Burkhart, J. M. Chesnutt, C. M. Connor, James E. Conway, George H. Detwiler, Daniel Dieffenderfer, J. C. Dieffenderfer, R. H. Dillinger, J. R. Dufford, H. B. Freeman, J. D. Gercke, E. M. Glauner, A. E. Griffin, L. V. Hans, A. M. Hartley, Harvey Hartman, H. F. Hoffman, Harry Hulmes, V. Jacobsen, C. G. Landes, George J. Lane, Willard H. Lapp, J. J. Lafferty, Wm. Marshall, C. S. Maxwell, L. E. McGrath, K. C. Melenbacker, H. C. Merrill, W. R. Netzbandt, E N. Poor, Walter P. Quinn, A. W. Redlin, Glen T. Rinegar, John R. Shallcross, Edw. A. Shallcross, John B. Shield, Chas. A. Shubert, C. LeGrande Smith, C. I. Stokes, R. E. Stone, D. Mason Sutherland, George M. Suydam, Philip B. Taft, R. U. Temple, Eugene W. Wall, Kingdon R. Watt, A. E. Waugh and Wesley Wilkins.

Alloy Steel Data Sheet

A new, compact shart showing analyses, physical characteristics and applications of nineteen different stainless steel, monel and nickel alloys has just been published by The Cooper Alloy Foundry Company. This also contains a handy cross reference of designations and type numbers of the Alloy Casting Institute, the American Iron and Steel Institute, American Society for Testing Materials, Society of Automotive Engineers, U. S. Navy, and others. This reference chart is standard letter size and can be conveniently filed. The Cooper Alloy Foundry Company, 210 Bloy street, Hillside, N. J., will be glad to furnish free copies on request.

The pH Factor in the Hypochlorite Bleaching of Wood Pulp*

Part I—Single-stage Treatment of Sulphite Pulp

By Ferri Casciani [1] and Gordon K. Storin [2]

Abstract

Results of a study of the pH factor in the single-stage hypochlorite bleaching of a west coast sulphite are presented. The work consists of three main parts:

(1) A study of the effect of bleaching with calcium hypochlorite alone using varying amounts of available chlorine on the final pH and on certain properties of the pulp.

(2) An investigation into the use of three alkalies —caustic soda, sodium metasilicate, and hydrated lime—under two sets of conditions: (a) in bleaching to an 81 brightness at a final pH of 6.7, and (b) in bleaching to a 74 brightness at a final pH of 7.25.

(3) A study of the effect of bleaching with calcium hypochlorite to a constant brightness at varying final pH values on chlorine requirement, bleaching time, and on certain pulp properties.

The importance of the pH factor in pulp bleaching is now quite widely recognized by technical men in the paper field. In spite of the widespread interest in this subject, little investigative work of a practical nature has been undertaken to study this factor. Several papers have been published on this subject in recent years, of which two are outstanding. These are the studies made by Samuelsen *(1)* in Norway and by Hisey and Koon *(2)* at Syracuse University.

In both these works, the conditions employed in working with sulphite pulp were quite different from any conditions which might be encountered in mill practice. Samuelsen ran his tests at a pulp consistency of 2% and a temperature of 25 deg. C., using sodium hypochlorite solution and an easy-bleaching pulp requiring only 3.55% available chlorine. Hisey and Koon ran their tests at 3% consistency and at a temperature which varied between 20 and 32 deg. C. Their work was done on a sample of exceptionally hard-bleaching pulp which required 10.3% of available chlorine to reach a brightness of 60. In both investigations, the desired pH was maintained by the use of buffer solutions. Since the amount of available chlorine added in all tests was kept constant (Samuelsen used 3.55% available chlorine; Hisey and Koon used 10.3% available chlorine in all tests), the resulting pulps obtained at the various pH values differed considerably in brightness, those bleached at the lower pH figures being much lower in brightness. Samuelsen used a constant bleaching time of 24 hours in all tests regardless of degree of exhaustion of the added chlorine, and consequently obtained a lower brightness also in the high pH range where the bleaching reaction is slow.

In the present work, a special effort has been made to employ conditions which conform somewhat with mill practice. An air-dry pulp consistency of 6% was used in all tests. The temperature employed was the lowest practical temperature which would give a reasonable bleaching time. A temperature of 90 deg. F. was found to be satisfactory in bleaching to a 74 brightness. In bleaching to an 81 brightness approximately the same bleaching time was obtained at a temperature of 105 deg. F. Insofar as was possible, all bleaching tests were run to a residual chlorine test of 0.25% (based on air-dry pulp weight), at which point the pulp was immediately washed. In practice, whenever it is desired to increase the pH during bleaching, this is usually accomplished by the addition of a definite amount of alkali at the beginning of the bleaching operation. This same practice was employed in these tests, the alkali or acid being thoroughly mixed with the pulp before the addition of the calcium hypochlorite solution.

It was felt that, in order to obtain information of practical value regarding the effect of pH on chlorine consumption, on bleaching time, and on chemical and physical properties of the pulp, all pulps in such a group of tests should be bleached to the same degree of brightness. While such a procedure calls for considerable work of a trial and error nature, nevertheless the increased value of the results obtained should be well worth the extra work involved.

Description of Methods

Details of the Bleaching Experiments

The pulp used in this work was an air-dry unbleached west coast sulphite pulp with a permanganate number of 16.5. Each batch consisted of 1200 grams air-dry weight of pulp. The pulp was thoroughly defibered in the 5-pound laboratory beater, drained on a Monel metal screen, and pressed to about 30% consistency in a fruit press. The sample was then crumbled into a 10-gallon stoneware crock. The amount of chemical solutions to be added, together with the correct volume and temperature of hot water required to give a pulp consistency of 6% and the desired temperature, were then calculated. The alkali or acid, if any, was diluted with half of the hot water required and this was added first to the pulp and thoroughly mixed by hand using a long rubber glove. After 10 minutes time the calcium hypochlorite liquor, diluted with the remaining volume of hot water, was added to and thoroughly mixed with the pulp. The pulp was again mixed by hand each time before taking a pH or temperature reading or before removing a sample for titration. It was found that, by carrying out the initial part of the test without the use of a hot water bath, the temperature remained quite constant, because the heat loss through the crock was approximately

---

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Member TAPPI; Research Department, Niagara Alkali Company, Niagara Falls, N. Y.

[2] Research Department, Niagara Alkali Company, Niagara Falls, N. Y.

compensated for by the heat of reaction between pulp and available chlorine. As soon as the temperature of the pulp showed a tendency to drop, the crock was placed in a hot water bath to maintain the desired temperature throughout the remainder of the bleaching period. When the proper residual chlorine test was obtained, the pulp was dumped on the Monel screen, washed thoroughly by means of a water spray from a hose, rinsed with additional water in the beater, and finally drained again on the screen and pressed to about 35% consistency in the fruit press.

The calcium hypochlorite employed in these tests consisted of a solution prepared from fresh bleaching powder (35.0-37.0% available chlorine content). The clear settled solution was decanted off, diluted to approximately 35 grams of available chlorine per liter, and an excess of hydrated lime added. A solution of uniform alkalinity (about 1.3 grams of calcium hydroxide per liter) was obtained by stirring in the excess lime and allowing it to settle each time before a portion of the liquor was drawn off for use in the tests.

Tests Made During the Bleaching

Five minutes after the addition of bleach liquor to the pulp and at regular intervals thereafter the pH of the pulp was tested by means of a Beckman pH meter employing a glass electrode. The reaction of the pulp to phenolphthalein indicator was noted at the same time. After about one hour of bleaching, tests also were made regularly for residual chlorine.

In addition to the regular calibration of the pH meter with the pH 7.0 buffer supplied by the manufacturer, a careful check was made covering the entire pH range 2.2-10.0. Disodium phosphate and citric acid solutions were combined in varying proportions to cover the pH range of 2.2-8.0; while a solution of potassium chloride and boric acid was combined in varying proportions with caustic soda solution to cover the pH range of 7.8-10.0 *(3)*. Several trials in which pH measurements were made in the pulp mixture directly and in the clear filtrate from the pulp indicated no difference in the results obtained. Consequently, all measurements were made by immersing the electrodes directly in the freshly mixed pulp.

The phenolphthalein indicator consisted of a solution of 2.5 grams of phenolphthalein in a liter of 50% alcohol. A few drops of the indicator were sprinkled on the surface of the freshly mixed pulp and any color change was noted.

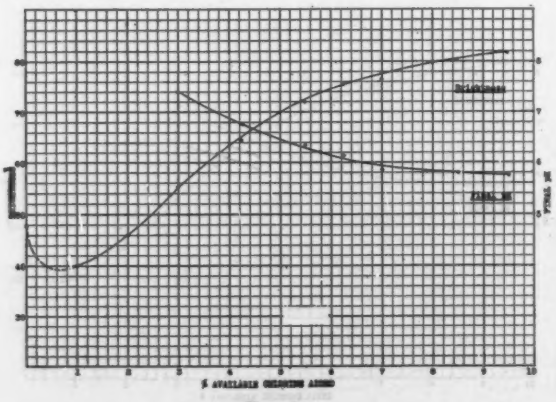


Fig. 1

Final pH during bleaching and the degree of brightness obtained in bleaching with varying amounts of added available chlorine. Constants: Air-dry pulp consistency—5%. No added alkali or acid

The residual chlorine test consisted of titrating 10 cc. of the filtrate from the pulp with 0.01 *N* sodium thiosulphate solution using an excess of KI in the sample, acidifying with acetic acid, and adding starch indicator near the end point in the usual manner.

Tests Made on the Bleached Pulp

The *brightness value* was determined on the General Electric reflectometer using the No. 1 filter in the standard manner.

The *fading test* consisted of exposing a properly surfaced handsheet of the pulp for two hours at a distance of 16 inches from a General Electric 250-watt type H-5 mercury vapor lamp.

In running *strength tests*, a 400-gram (air-dry) sample of the pulp was beaten in the 1½-pound standard beater, using the 4500-gram weight on the bedplate. Freeness tests were made on a Schopper-Riegler tester at 15-minute intervals during the beating. Handsheets made at these same intervals were tested in the moisture-free condition for Mullen bursting strength and Elmendorf tearing resistance. It is unfortunate that the air conditioning equipment (used to maintain a constant relative humidity of 50% and a temperature of 70 deg. F.) was not in working order at the time these tests were made.

Values for freeness are expressed in "per cent freeness" (the reciprocal of "beating degree"), bursting strength in "points per 100-pound ream," and tearing resistance in "grams per 100-pound ream."

Tests for *ash content* and *alpha-cellulose content* were run according to the TAPPI Standard Method.

Object of Experiments

The investigations covered in this work may be divided into three main parts. The first consists of a study of the effect of bleaching with varying amounts of available chlorine on the final pH and on the properties of the pulp. In this work, calcium hypochlorite solution alone was used with no attempt made to influence in anyway the normal change in pH which occurs in regular single-stage hypochlorite bleaching of sulphite pulp.

The second part consists of an investigation into the use of three alkalies: namely, caustic soda, sodium metasilicate, and hydrated lime. The results obtained with these alkalies were compared under two sets of conditions: (1) in bleaching to an 81 brightness at a final pH of about 6.7, and (2) in bleaching to a 74 brightness at a final pH of 7.25.

The third phase of the work concerns itself with the effect of bleaching with calcium hypochlorite to a constant brightness at varying final pH on chlorine requirement, bleaching time, and on pulp properties.

Bleaching with Varying Amounts of Chlorine (Using Calcium Hypochlorite Alone)

Description of Tests

A group of ten experiments were run in which available chlorine was added in amounts varying from 1.0 to 9.5% (Table I). A minimum temperature of about 75 deg. F. was used in the treatments employing the smallest dosages of available chlorine, because in many mills this represents the lowest practical temperature which can be obtained during the summer months. Higher temperatures were used in bleaching to the higher brightness values to keep the bleaching time within practical limits. The maximum temperature used was 105 deg. F. to conform with the maximum usually employed in practice. So far as it was

TABLE I.—EFFECT OF BLEACHING WITH VARYING AMOUNTS OF AVAILABLE CHLORINE ON THE FINAL pH

Constants: Air-dry pulp consistency.... 6%
Alkali or acid added..... none

Test	Available Chlorine Added, %	Temp., deg. F.	Time, minutes	Residual Chlorine, %	Final pH	Brightness
Unbl.	...	...	...	...	...	47.8
1209A	1.0	76	15	trace	8.03	40.0
1209B	2.0	76	30	.10	7.40	45.9
1215B	3.0	78	60	.25	7.36	55.0
1212A	4.25	81	145	.25	6.77	64.4
1121	5.5	90	135	.25	6.32	72.0
1125B	5.8	91	180	.25	6.21	74.2
1124A	**6.25**	**90**	**180**	**.25**	6.13	75.3
1117	7.0	95	180	.25	5.85	76.5
1001	8.5	103	180	.25	5.80	79.2
1105	9.5	104	240	.27	5.75	81.9

practical to do so, all pulps were washed when the residual chlorine test was 0.25% (based on air-dry weight of pulp).

OBSERVATIONS

(1) *Final pH.* The final pH value was found to depend upon the degree of bleaching (Fig. 1) and was progressively lower with increase in final brightness. Above a brightness of about 78 the drop in final pH was only slight. In bleaching to the higher brightness values, the final pH appeared to reach a minimum value at about 5.75. *In view of these findings, it appears that statements in the literature which fix the final pH for all single-stage hypochlorite bleaching at about 6.3 to 6.8, are misleading.*

(2) *Use of Phenolphthalein Indicator.* Ordinarily the lowest pH at which phenolphthalein indicator will give a pink color reaction is about 8.3. Consequently, it has been taken for granted that, in the bleaching of pulp, a pink reaction to phenolphthalein indicates a pH somewhat above 8.3. This was found to be true when the pulp was bleached with 2.0% of available chlorine. However, as the chlorine dosage was progressively increased from test to test, *it was observed that phenolphthalein gave pink reactions at progressively lower pH values.* For example, in bleaching to a 74 brightness, a pink reaction was obtained all the way down to a pH of about 7.2. In bleaching to an 81 brightness, the pink reaction persisted down to a pH of about 6.7. Kolthoff and Laitinen *(4)* have pointed out that, "in colloidal solutions, the indicator equilibrium may be changed on account of a specific adsorption of either the acid or alkaline form of the indicator. Under such conditions an entirely wrong value of the pH of the solution is obtained. . . . . Also in the presence of finely divided particles the indicator may assume a color not corresponding to the pH of the solution, on account of a surface reaction. . . . .

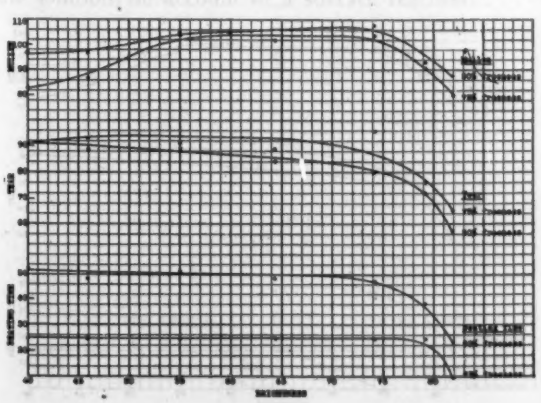


FIG. 2

Strength and beating characteristics of the pulp when bleached to varying degrees of brightness.

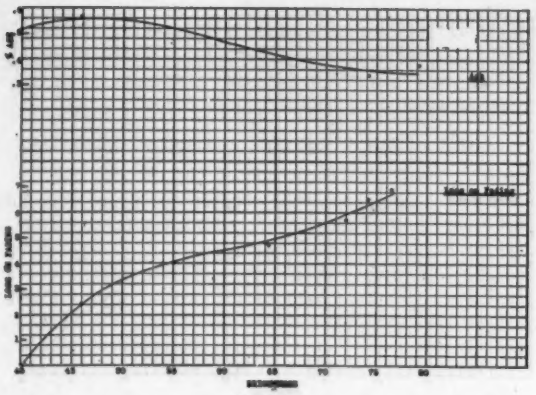


FIG. 3

Ash content and fading characteristic of the pulp when bleached to varying degrees of brightness.

Quite generally in the presence of finely divided substances and in colloidal solutions one has to be careful with the results of the colorimetric method." Whatever the explanation for this behavior of phenolphthalein indicator, it is apparent that it is entirely unreliable when used in the single-stage hypochlorite bleaching of sulphite pulp.

(3) *Brightness Obtained.* While the unbleached pulp had a brightness value of 47.8 at the time of these tests, the value obtained on the same pulp about four months earlier was 50.7. The records of the mill from which the pulp was obtained showed that this lot of pulp had a brightness of 59.3 and an air-dry consistency of 87% when first received from the manufacturer. (Under the conditions of storage in the laboratory, the pulp had gradually dried out to an air-dry test of 103%.) Treatment of the pulp with small amounts of available chlorine resulted in a brightness lower than that of the unbleached pulp (Fig. 1). Improvement in brightness did not begin until more than 2.2% of available chlorine was used. The improvement in brightness was then quite rapid until a brightness of about 74 was reached. Thenceforth, considerably more available chlorine was required for a given improvement in brightness. Treatment with 5.8% available chlorine gave a brightness of 74.2. About 50% more available chlorine, or a total of 8.5%, was required to arrive at a brightness of 80.5.

(4) *Strength of the Bleached Pulp.* The bursting strength of the pulp showed a gradual improvement as a result of the bleaching treatment up to a brightness of about 55 (Fig. 2). The value then remained about the same up to a brightness of about 74 beyond which the strength dropped quite rapidly.

The tearing resistance showed a small gradual drop in value with increased bleaching up to a brightness of about 74. Bleaching to a higher brightness resulted in a more marked loss in tear.

The beating time required to arrive at a freeness of 50% remained practically constant for all the samples except those bleached to a brightness higher than approximately 74. The beating time then dropped very materially with increase in brightness.

(5) *Ash Content.* The ash content, which was 0.46% for the unbleached pulp, increased slightly as a result of the treatment with 1 and 2% of available chlorine but dropped to a figure of about 0.35% as the brightness of the pulp was improved (Fig. 3).

(6) *Loss on Fading.* The pulp treated with 1% available chlorine showed no change in brightness

when subjected to the fading test, while the unbleached pulp showed a loss of 2.8 points (Table II). The loss in brightness due to fading then became more pronounced as the brightness increased until, at a brightness of 76.5, the loss was 6.9 points (Fig. 3).

Comparison of the Use of Three Alkalies

DESCRIPTION OF TESTS

Pulp consistency, temperature, residual chlorine, final pH, and brightness after bleaching were all kept constant in each of the two groups of experiments making up this investigation (Tables III and V). The final pH was that which gave a light pink reaction to phenolphthalein at the end of the bleaching period. This pH was about 6.7 for the 81 brightness tests and 7.25 for the 74 brightness tests. Caustic soda, sodium metasilicate, and a good grade of commercial hydrated lime were the three alkalies used. The amount of alkali required to obtain the desired final pH and the amount of available chlorine required to obtain the desired brightness were adjusted by trial and error until the correct results were achieved.

OBSERVATIONS

(1) *Comparative Alkali Requirements.* In bleaching to an 81 brightness, a final pH of approximately 6.7 was obtained by using either 1.25% of NaOH, 3.0% of Na_2SiO_3, or 1.75% of lime (Table III). An additional test using only 1.75% of Na_2SiO_3 gave a final pH of only 5.98. In bleaching to a 74 brightness, a final pH of 7.25 was obtained by the use of either 0.75% of NaOH, 1.75% of Na_2SiO_3, or 0.90% of lime (Table V). The ratio of the relative amounts of the three alkalies required to give the same final pH was therefore about 2.33 parts of Na_2SiO_3 or 1.2 parts of lime for one part of NaOH.

(2) *Comparative Chlorine Requirements.* In bleaching to the 81 brightness, the chlorine requirement was about 8.0% regardless of which alkali was employed. Allowing for the somewhat higher brightness obtained in the blank test in which hypochlorite alone was used, the amount of available chlorine re-

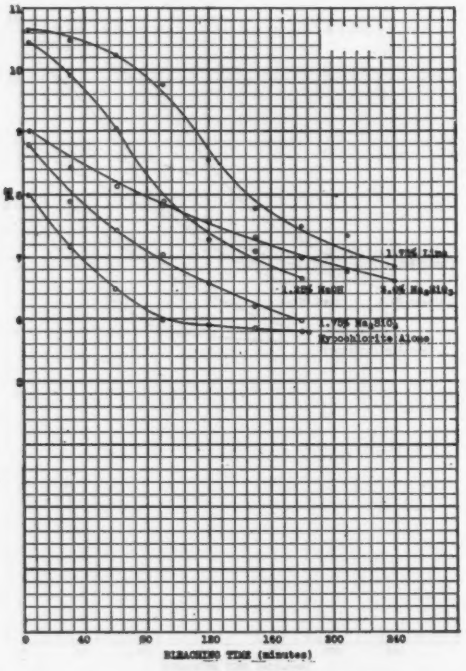


FIG. 4

Variation in pH during bleaching in bleaching to a high brightness with the addition of various alkalies. Constants: Air-dry pulp consistency—6%; Temperature—104 deg. F.; Residual chlorine—0.36-0.50%; Final pH—6.60-6.83; Brightness after bleaching—81.0-81.3

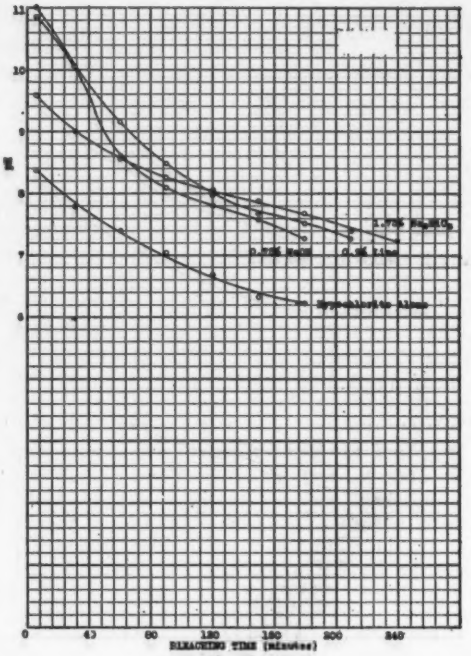


FIG. 5

Variation in pH during bleaching in bleaching to a low brightness with the addition of various alkalies. Constants: Air-dry pulp consistency—6%; Temperature—91 deg. F.; Residual chlorine—0.25-0.30%; Final pH—7.25; Brightness after bleaching—74.2-74.4

TABLE III.—COMPARISON OF THE USE OF THREE ALKALIES IN BLEACHING TO A HIGH BRIGHTNESS

Constants: Air-dry pulp consistency 6%
Temperature ..... 104 deg. F.
Residual chlorine 0.36-0.50%
Final pH 6.60-6.83
Brightness after bleaching 81.0-81.3

Test	Alkali Added, %	Available Chlorine Added, %	Time, minutes	Residual Chlorine, %	Final pH	Brightness
1027	1.25% NaOH	8.0	180	.44	6.65	81.0
1023	3.0% Na_2SiO_3	8.0	240	.36	6.60	81.3
1021	1.75% Lime	8.0	240	.50	6.83	81.2
Blank:						
1105	none	9.5	185	.27	5.75	81.9
Additional Test with less silicate:						
1022	1.75% Na_2SiO_3	8.0	180	.21	5.98	79.9

TABLE II.—EFFECT OF BLEACHING WITH VARYING AMOUNTS OF AVAILABLE CHLORINE ON PULP QUALITY

Test	Brightness	Loss on Fading	Ash, %	Beating Time to 75% Freeness	Beating Time to 50% Freeness	Burst at 75% Freeness	Burst at 50% Freeness	Tear at 75% Freeness	Tear at 50% Freeness
Unbleached	47.8	2.8	.46	22	47	98	109	112	104
1209A	40.0	0.0	.52	24	52	83	97	91	91
1209B	45.9	2.4	.57	24	48	87	97	93	89
1215B	55.0	4.0	..	24	51	104	105	91	89
1212A	64.4	4.7	..	24	48	102	102	89	84
1121	72.0	5.7	..	..	..	..	..	..	..
1125B	74.2	6.5	.34	24	47	104	108	96	80
1124A	75.3	..	..	..	..	..	..	..	..
1117	76.5	6.9	..	..	..	..	..	..	..
1001	79.2	..	.38	24	38	91	93	76	72
1105	81.9	..	..	9	23	80	88	65	57

TABLE IV.—EFFECT ON PULP QUALITY OF USING ALKALIES IN BLEACHING TO A HIGH BRIGHTNESS

Test	Alkali Added	Ash, %	Beating Time to 75% Freeness	Beating Time to 50% Freeness	Burst at 75% Freeness	Burst at 50% Freeness	Tear at 75% Freeness	Tear at 50% Freeness
1027	NaOH	.81	15	28	85	95	75	75
1023	Na_2SiO_3	.59	17	31	93	102	76	75
1021	Lime	.85	14	25	76	77	69	68
Blank:								
1105	none	.38	11	22	82	88	62	57
Additional Test with less silicate:								
1022	Na_2SiO_3	.50	16	30	91	97	78	75

quired to give the same brightness when no alkali was used was 9.0%. When the amount of silicate was reduced from 3.0 to 1.75% the brightness dropped from 81.3 to 79.9.

In bleaching to the 74 brightness, 5.8% available chlorine was required when no alkali was employed. The use of NaOH reduced the chlorine requirement to 5.1%. With both Na_2SiO_3, and lime, the chlorine requirement was 5.3%.

(3) *Comparative Bleaching Time.* Of the three alkalies, caustic soda gave the shortest bleaching time. In the case of both the 74 and 81 brightness tests, the bleaching time with caustic soda was about the same as when no alkali was used. Both sodium metasilicate and lime gave an appreciably longer bleaching time in both groups of tests.

In studying the curves in Figs. 4 and 5, it will be noted that the tests with Na_2SiO_3 are characterized by distinctly lower pH values maintained in the first half of the bleaching period, as compared with the high values obtained with NaOH and lime. It would appear from this that the bleaching time is not necessarily lengthened by high pH values in the early part of the bleaching treatment.

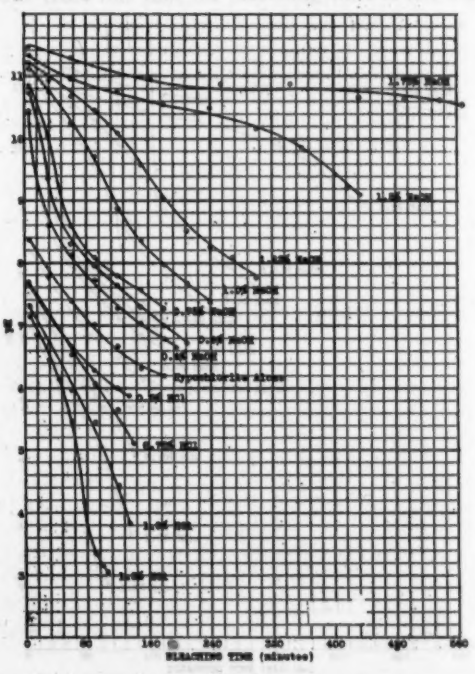


FIG. 6

Variation in pH during bleaching in bleaching to a constant brightness with the addition of varying amounts of NaOH or HCl. Constants: Air-dry pulp consistency—6%; Temperature—91 deg. F.; Residual chlorine—0.25%; Brightness after bleaching—74.2-74.4

(4) *Ash Content of the Pulp.* The use of alkali increased the ash content of the pulp materially (Tables IV and VI). The least increase in ash was obtained with Na_2SiO_3. In bleaching to the 74 brightness, Na_2SiO_3 raised the ash from 0.34 to 0.46%. Caustic soda gave an ash of 0.53% and lime 0.63%.

At the 81 brightness, the increase in ash due to the use of alkali was more pronounced. Sodium metasilicate raised the ash from 0.38 to 0.59%. Caustic soda gave an ash of 0.81% and lime 0.85%.

(5) *Strength Properties.* There was little difference in the strength of the pulps which were bleached to a 74 brightness (Table VI). The tearing resistance was practically the same in all four tests. Caustic soda gave a slightly better burst than the other tests. However, in bleaching to the higher brightness, it appeared a pulp of lower strength was obtained when lime was used. Both NaOH and Na_2SiO_3 gave pulps which were better than the blank in which hypochlorite alone was used.

Bleaching to a Constant Brightness at a Varying Final pH

Description of Tests

Pulp consistency, temperature, residual chlorine, and brightness after bleaching were all held constant (Table VII). Varying amounts of either HCl or NaOH were added to give final pH values ranging from 3.0 to 10.5 (Fig. 6). The amount of available chlorine employed in each test was adjusted by trial and error until the brightness obtained was the same in each case.

Observations

(1) *Effect of Final pH on Chlorine Requirement.* Figure 8 shows how the chlorine requirement varied with the final pH value. In general, as the final pH increased, there was a marked decrease in the amount

TABLE V.—COMPARISON OF THE USE OF THREE ALKALIES IN BLEACHING TO A LOW BRIGHTNESS

Constants:	Air-dry pulp consistency	6%
	Temperature	91 deg. F.
	Residual chlorine	0.25-0.30%
	Final pH	7.25
	Brightness after bleaching	74.2-74.3

Test	Alkali Added, %	Available Chlorine Added, %	Time, minutes	Residual Chlorine, %	Final pH	Brightness
1127B	0.75% NaOH	5.1	180	.26	7.26	74.3
1128	1.75% Na_2SiO_3	5.3	240	.30	7.22	74.2
1125A	0.90% Lime	5.3	210	.28	7.25	74.2
Blank:						
1125B	none	5.8	180	.25	6.21	74.2

TABLE VI.—EFFECT ON PULP QUALITY OF USING ALKALIES IN BLEACHING TO A LOW BRIGHTNESS

Test	Alkali Added	Loss on Fading	Alpha-Cellulose, %	Ash, %	Beating Time to 75% Freeness	Beating Time to 50% Freeness	Burst at 75% Freeness	Burst at 50% Freeness	Tear at 75% Freeness	Tear at 50% Freeness
1127B	NaOH	7.5	85.08	.53	23	45	110	114	90	88
1128	Na_2SiO_3	6.1	85.33	.47	20	40	101	106	92	86
1125A	Lime	7.6	85.26	.63	22	41	98	104	90	82
Blank:										
1125B	none	6.5	85.07	.34	24	47	104	108	96	80

TABLE VII.—BLEACHING TO A CONSTANT BRIGHTNESS AT A VARYING FINAL pH

Constants: Air-dry pulp consistency 6%
Temperature ..... 91 deg. F.
Residual chlorine 0.25%
Brightness after bleaching..... 74.2-74.4

Test	NaOH or HCl Added, %	Available Chlorine Added, %	Time, minutes	Final pH	Brightness Obtained
1206	1.50 HCl	8.00	105	3.05	74.3
1203B	1.00 HCl	7.00	130	4.02	74.2
1218	.75 HCl	6.15	140	5.10	74.2
1216	.50 HCl	5.75	135	5.88	74.3
1125B	none	5.80	180	6.21	74.2
1210B	.40 NaOH	5.75	195	6.65	74.3
1211A	.60 NaOH	5.60	205	6.76	74.4
1127B	.75 NaOH	5.10	180	7.26	74.3
1201	1.00 NaOH	4.90	225	7.50	74.3
1202A	1.25 NaOH	4.75	300	8.00	74.4
1205A	1.50 NaOH	4.40	435	9.09	74.4
1210A	1.75 NaOH	4.35	570	10.52	74.4
104 deg. F. Trial:					
1211B	1.75 NaOH	4.35	240	10.53	71.5

of available chlorine required to obtain the same brightness. At a final pH of 3.05, the chlorine requirement was 8.0% while at a final pH of 10.52 only 4.35% available chlorine was required. An exception to this trend was noted between pH 5.8 and 6.5, in which range the chlorine consumption increased slightly before continuing downward. Because these tests were made with unbuffered solutions, and since the pH range referred to is only the final pH, it is impossible to say whether or not this phenomenon is connected in any way with the potentiality for

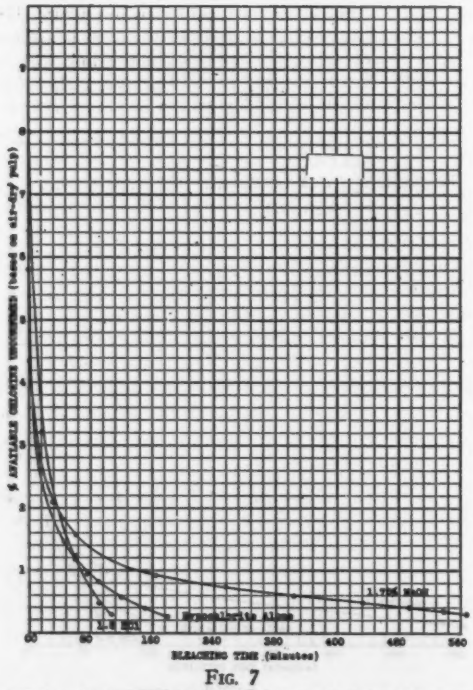


FIG. 7

Effect of the addition of HCl or NaOH on the rate of consumption of available chlorine in bleaching to a constant brightness. Constants: Air-dry pulp consistency—6%; Temperature—91 deg. F.; Residual Chlorine—0.25%; Brightness after bleaching—74.2-74.4

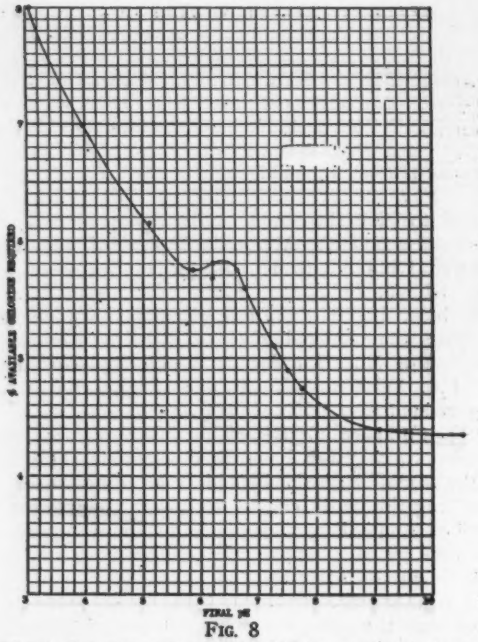


FIG. 8

Variation in the amount of available chlorine required in bleaching to a constant brightness at varying final pH values. Constants: Air-dry pulp consistency—6%; Temperature—91 deg. F.; Residual Chlorine—0.25%; Brightness after bleaching—74.2-74.4

chlorate formation which Samuelsen *(1)* found to be characteristic of the hypochlorite solution in the pH range 6.0-7.0. In working with buffered solutions, he observed an increase in the rate at which chlorine was consumed by the pulp in this same range.

It also will be noted in Fig. 8 that little or no additional saving in chlorine was realized by going to final pH values higher than approximately 9.0.

The rate at which available chlorine was consumed under widely varying conditions of pH is shown in Fig. 7.

(2) *Effect of Final pH on Bleaching Time.* Referring to Fig. 9, it will be seen that above a final pH of 7.4 the bleaching time increased very rapidly. In the range of pH 3 to 6 the bleaching time increased only slightly. However, between pH 6 and 7 there was a more pronounced increase in bleaching time which corresponded with the increase in chlorine consumption which showed up in this same range.

The longest bleaching time was 9½ hours with a final pH of 10.52 when 1.75% of NaOH was used. To note the effect of using an elevated temperature to shorten the bleaching time this test was repeated using a temperature of 104 deg. F. instead of 91 deg. F. (Table VII). By so doing, the bleaching time was reduced to 4 hours but the brightness obtained was only 71.5 compared with the 74.4 obtained at the lower temperature.

TABLE VIII.—EFFECT ON PULP QUALITY OF BLEACHING TO A CONSTANT BRIGHTNESS AT A VARYING FINAL pH

Test	Loss on Fading	Alpha-Cellulose, %	Ash, %	Beating Time to 75% Freeness	Beating Time to 50% Freeness	Burst at 75% Freeness	Burst at 50% Freeness	Tear at 75% Freeness	Tear at 50% Freeness
1206	5.3	81.99	.31	20	41	91	95	82	75
1203B	5.5	84.40	.24	22	42	97	109	93	90
1218	4.6	84.46	.29	22	46	92	100	82	79
1216	6.2	84.70	.37	22	46	104	100	86	78
1125B	6.5	85.07	.34	24	47	104	108	96	80
1210B	..	84.89	.51	21	44	91	98	81	75
1211A	6.2	85.11	.50	23	47	95	101	83	78
1127B	7.5	85.08	.53	23	45	110	114	90	88
1201	6.9	85.12	.54	24	45	100	113	82	77
1202A	..	85.47	.57	21	47	93	106	91	89
1205A	6.6	85.75	.64	21	46	96	105	83	79
1210A	6.5	85.66	.66	22	43	80	82	79	78
104 deg. F. Trial:									
1211B	4.9	85.67	..	23	46	94	105	84	80

(3) *Variation in Color Characteristics.* While all samples were bleached to the same brightness as determined using the No. 1 filter, the hand-sheets did not appear to be the same to the eye. The samples bleached at the lower pH values appeared to be brighter or whiter. A color curve was run on three different samples of pulp using the series of filters with which the reflectometer is equipped (Fig. 10). It was found that the pulp bleached in the lower pH range (final pH 4.0) gave a higher reflectance in the violet and a lower reflectance in the yellow and red than the sample bleached with hypochlorite alone (final pH 6.25). This sample would, therefore, appear whiter to the eye because it more nearly approaches a neutral white in appearance. Bleaching under more alkaline conditions (final pH 7.75) did not change the position of the yellow and red portion of the curve but did result in a lower reflectance in the violet end of the spectrum. This sample would therefore appear slightly more yellow or red to the eye than either of the other two samples.

(4) *Effect of Final pH on Ash Content.* The ash content of the pulp increased as the final pH increased (Fig. 11). The ash appeared to drop to a minimum of slightly under 0.3% at a final pH of 5 and under. There was then a quite rapid increase with increasing pH until at a final pH of 9.0 and higher a maximum of about 0.65% was reached.

(5) *Effect of Final pH on Alpha-Cellulose Content.* From pH 4 to 9, the alpha-cellulose increased slightly in practically a straight line from a value of about 84.2 to about 85.7% at which point it seemed to reach a maximum (Fig. 11). Below pH 4 there was a rapid drop in alpha-cellulose to a figure of about 82.0% at a final pH of 3.

(6) *Loss on Fading.* The samples bleached at the lowest pH values appeared to have the best stability of color (Fig. 11). The maximum fading took place in the region of mild alkalinity (final pH 7.0-8.5), where the loss was about 7 points compared with about 5.4 points in the lower pH ranges. The fading was slightly less as the final pH increased to 10.5.

(7) *Effect of Final pH on Strength of the Pulp.* Despite the rather inconclusive results obtained from the strength tests (Table VIII), it does not appear that there is any particular pH range which is especially critical insofar as the strength of the pulp is concerned (Fig. 12). The burst at 50% freeness appears to rise gradually from a value of about 95 at final pH 3 to a maximum of about 109 at final pH about 8. At pH 10.5 the burst value dropped to 82, perhaps as a result of the 9½-hour bleaching treatment.

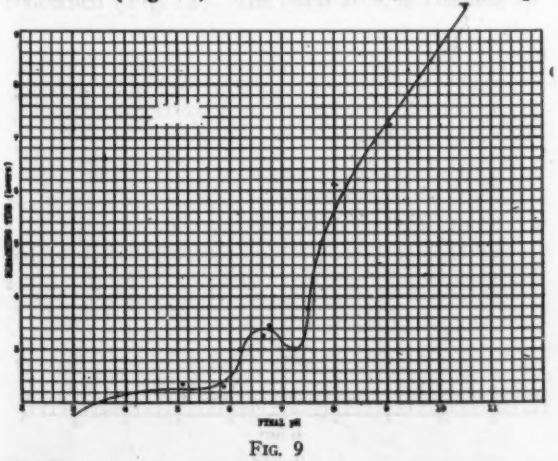


FIG. 9

Variation in bleaching time in bleaching to a constant brightness at varying final pH values. Constants: Air-dry pulp consistency—6%; Temperature—91 deg. F.; Residual chlorine—0.25%; Brightness after bleaching—74.2-74.4

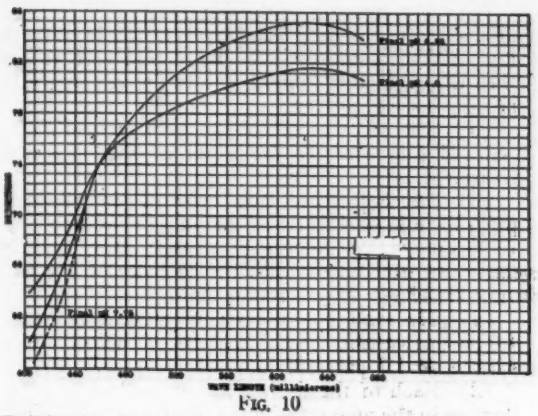


FIG. 10

Variation in color characteristics of the pulp when bleached to a constant brightness at various final pH values.

The tearing resistance of the pulp appeared to be practically unaffected by the pH of bleaching. There seemed to be a slight tendency toward lower values at both ends of the curve, which tendency might be more pronounced in bleaching to a higher brightness, but which was of little or no significance in this work.

The beating time also remained practically constant for all tests.

Hisey and Koon *(2)* reported that the pulp of best strength was obtained at a pH of 1.7 and that the pulps were progressively weaker as the pH was increased by stages to 10.8. The reason for this finding is apparent when we take into consideration the fact that at a pH of 1.7 the brightness obtained was only 50.5, and as the pH was increased the brightness improved until at pH 10.8 the brightness was 73.4. It is to be expected that the latter pulp will show more degradation than the first.

Conclusion

In the single-stage bleaching of this particular air-dry west coast sulphite pulp with calcium hypochlorite solution the following points were observed.

(A) Bleaching with calcium hypochlorite solution alone at an air-dry consistency of 6% it was found that:

(1) The final pH obtained in bleaching depended on the degree of bleaching and was progressively lower with increase in final brightness. In bleaching to a brightness of 82, the final pH value was 5.75.

(2) Phenolphthalein proved to be very unreliable as an indicator of the pH of the pulp during the bleaching treatment. As the chlorine dosage was increased, phenolphthalein gave a pink reaction at progressively lower pH values.

(3) Treatment with less than 2.2% of available chlorine actually resulted in a lowering of the brightness of the pulp. The brightness then improved quite rapidly up to a brightness of about 74, beyond which the amount of available chlorine required to obtain a small improvement in brightness increased considerably. In bleaching to an 80.5 brightness, nearly 50% more available chlorine was required than in bleaching to a 74.2 brightness.

(4) The strength of the pulp was not adversely affected until the pulp was bleached to a brightness higher than about 74. The burst and tear values then dropped quite materially and the resistance to beating became poorer.

(5) The ash content of the pulp seemed to be reduced somewhat as the result of the bleaching treatment.

(6) The higher the brightness of the bleached pulp, the less resistant was the pulp to fading.

(B) Comparing the use of caustic soda, sodium metasilicate, and lime as alkalies to increase the pH during bleaching, it was found that:

(1) The same final pH was obtained with either 1.0 part of caustic soda, 2.33 parts of sodium metasilicate, or 1.2 parts of lime.

(2) Each of the three alkalies resulted in a reduction in the amount of available chlorine required to obtain a given brightness. There was little difference between the three alkalies in this respect, although caustic soda appeared to have a slight edge on the others.

(3) Caustic soda gave a somewhat shorter bleaching time than the two other alkalies.

(4) The use of alkali increased the ash content of the pulp. Contrary to expectations, sodium metasilicate gave less of an increase in ash than either caustic soda or lime. The greatest increase in ash was obtained when the pulp was bleached to the higher brightness.

(5) In bleaching to a 74 brightness, no marked effect on the strength properties of the pulps was caused by the use of any of the alkalies. In bleaching to an 81 brightness, both caustic soda and sodium metasilicate showed a protective influence on the strength of the pulp, while lime appeared to be responsible for an additional loss in pulp strength.

(C) In bleaching to a constant brightness of 74.2-74.4 and using a pulp consistency of 6% and a bleaching temperature of 91 deg. F., it was found that:

(1) When calcium hypochlorite alone was used, the final pH was 6.2. By adding 1.5% of HCl in one case, the final pH was lowered to 3.05; and by adding 1.75% of NaOH in another the final pH was raised to 10.5.

(2) In general, the higher the final pH the lower was the amount of available chlorine required to obtain the same brightness of pulp. At a final pH of 3.05 the available chlorine requirement was

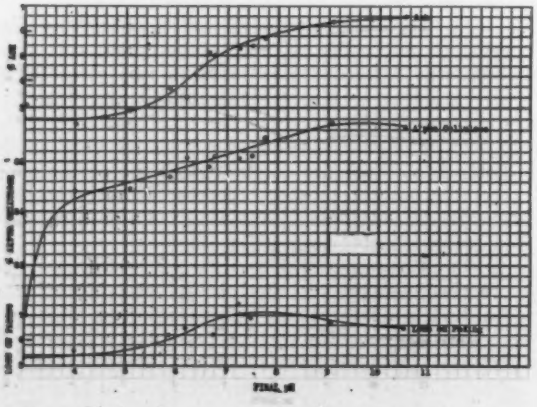


FIG. 11

Ash content, alpha-cellulose content, and fading characteristics of the pulp when bleached to a constant brightness at varying final pH values.

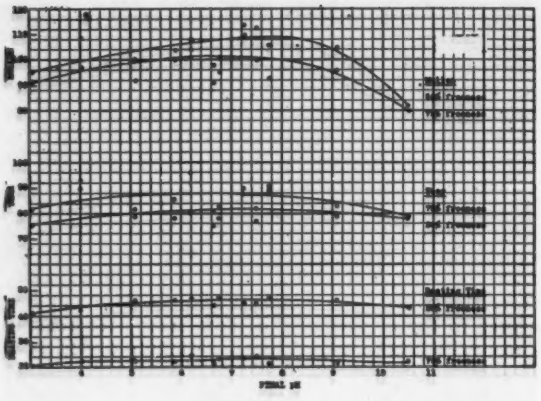


FIG. 12

Strength and beating characteristics of the pulp when bleached to a constant brightness at varying final pH values.

8.0%; at a final pH of 10.5 the requirement was only 4.35%.

(3) In the range of final pH values of 5.8 to 6.5 there was an unexpected increase in chlorine requirement for which no satisfactory explanation could be found.

(4) No significant saving in available chlorine was effected by employing final pH values higher than 9.0.

(5) Increasing the final pH above 7.4 resulted in a rapid lengthening of the bleaching time. In going from a final pH of 3.0 to 6.0 the bleaching time increased only moderately. Between the final pH of 6.0 and 7.0 there was a more pronounced increase in bleaching time corresponding with the increased chlorine consumption in this range.

(6) When the bleaching temperature was raised to 105 deg. F. to shorten the bleaching time at a final pH of 10.5, the brightness of the resulting pulp was lower by nearly 3 points.

(7) In spite of the practically identical brightness obtained in all tests, the pulps bleached at the lower pH values appeared whiter to the eye. Color curves revealed that the pulp bleached at the lower pH was more nearly neutral white in color.

(8) The ash content of the pulp increased as the final pH during bleaching increased. The ash rose from a low of about 0.3% to a maximum of about 0.65%.

(9) The alpha-cellulose content showed a gradual but persistent increase as the final pH was raised from 4.0 to 9.0. Below pH 4.0 there was a marked decrease in alpha-cellulose content.

(10) The pulps bleached at the lower pH values were the least subject to fading.

(11) The pH of bleaching appeared to have little effect on the strength properties of the pulp so long as the pulp was bleached to the same brightness in every case. The only clear tendency seemed to be that of a lowering of the burst at final pH 10.5.

Literature Cited

1. Samuelsen, S., *World's Paper Trade Rev.* 106, 1284-8, 1380, 1382, 1420, 1422, 1462-6, 1506, 1508, 1542, 1544, 1586, 1588, 1621-6, 1670, (1936).
2. Hisey, W. O. and Koon, C. M., *Tech. Assoc. Papers* 19:293-300 (June, 1936); Paper Trade J. 103, no. 6:36-43 (1936).
3. Clark, W. Mansfield, "The Determination of Hydrogen Ions", 3rd ed. Baltimore, Williams and Wilkins Co. (1928).
4. Kolthoff, I. M., and Laitinen, H. A., "pH and Electro Titrations", 2nd ed., 51-52. New York, John Wiley and Sons. 1941.

IMPORTS OF PAPER

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 7, 1942

SUMMARY

Newsprint .....295 rolls

NEWSPRINT

——, ——, ——, 295 rolls.

PAPERSTOCK

——, ——, ——, 982 bls. cotton linters.

BONES

——, ——, ——, 1627 bags.

Cylinder Shortage More Acute

The shortage of cylinders for chlorine, ammonia, carbon dioxide, and other compressed gases needed by many essential industries is becoming more and more acute, and, to prevent drastic restrictions in the distribution of these chemicals, all users and transportation companies must cooperate in returning the containers to the producers, warns R. J. Quinn of the Mathieson Alkali Works, Inc.

"Most users of compressed gasses are probably trying to return their cylinders promptly, but many find that the railroads and the trucking companies are becoming increasingly unwilling to handle small shipments," states Mr. Quinn. "This situation can be remedied, however, if transportation managers fully understand the importance of getting cylinders back for refilling as quickly as possible, and if shippers of cylinders will cooperate with the transport companies in arranging shipments that can be handled economically.

"No new cylinders can be obtained, and the number being diverted from civilian use by our war effort is constantly increasing," Mr. Quinn points out. "But if all concerned will keep the available supply in constant circulation, it should be possible to serve satisfactorily all important users of compressed gases.

"To everyone who is helping in this vital task, we want to say 'Thanks for the Tanks'!"

To Manage Centrifugal Pump Dept.

Thirty years of experience engineering and selling Allis-Chalmers pumps, beginning the year he left college, have earned for H. P. Binder the position of manager of the centrifugal pump department, according to an announcement by Walter Geist, Allis-Chalmers president. Mr. Binder had been assistant manager of the hydraulic department, in charge of centrifugal pump sales and engineering, since 1940.

In the period since 1919, when the new department head entered the hydraulic department as its first sales engineer, Allis-Chalmers centrifugal pump business has expanded more than 100 times. His career previous to 1919 brought Mr. Binder to Allis-Chalmers from Purdue University in 1911, when he entered the company's student training course. In 1912 he took charge of the company's first hydraulic test pit, handling all development testing for the next several years.

Mr. Binder left the engineering department at Allis-Chalmers in 1917 to enter the service. Attached to the first and only completely motorized field artillery unit in the U. S. regular army during last war, he gained a great deal of mechanical experience, and was captain when discharged at the end of the war.

Inaugurating sales engineering work in the pump department on his return, he had charge of the sales and engineering on special pump installations, municipal jobs and pump applications in process and power plants for many years. As the department expanded, he trained other men to specialize in these various fields of pump applications. In 1940 he was named assistant manager of the hydraulic department.

B. C. Women Workers Get Pay Increases

Wages for women workers in pulp and paper mills in British Columbia have now been increased. The Regional War Labor Board has approved a starting rate of 50 cents per hour for women workers in pulp paper mills at both Powell River and Ocean Falls, B. C. Announcement to this effect was made recently at Powell River by H. S. Hansen, president of the Local 76 International Brotherhood of Pulp Sulphite and Paper Mill Workers, and W. M. Hill, president of Local 142 International Brotherhood of Papermakers.

The rate applies to women being taught a job and to those working on modified men's jobs. In all cases where women perform equal work to men the job rate will apply.

Both union heads expressed satisfaction with the agreement, Hill finding the War Labor Board's approval a "gratifying conclusion to employer-employee conferences through which agreement was reached."

Mr. Hansen expressed hope other industries in British Columbia would pattern their negotiations on the discussions leading to the agreements and said the rate now paid women at Powell River and Ocean Falls "is one of the best in the industry."

E. S. Coe, Jr. New Manager

Farrel-Birmingham Company, Inc. of Ansonia, Conn. and Buffalo, N. Y., announces the appointment of Edward S. Coe, Jr., as manager of its New York office at 79 Wall street, to succeed E. H. Thomas, recently deceased.

To his new post Mr. Coe brings a varied experience and knowledge of the company's products gained in a number of positions he has held in the company since 1936.

Following two years at the Buffalo plant on gear sales he spent a brief period at the New York office and then over a year as sales engineer in the Chicago office. The next three years were spent at sales engineering at the company's main office in Ansonia. For the past few months he has been in charge of expediting production of Farrel-Sykes gear generating machines.

Born in Worcester, Mass., Mr. Coe received his early education there and graduated from Worcester Polytechnic Institute in 1931 with a degree of Civil Engineer. Following his graduation he worked at the Trenton and Worcester plants of American Steel and Wire Company for four years before joining Farrel-Birmingham Company.

New York Paper and Pulp Market Review

OPA Issues Revision of Newsprint Regulation 130—Buying Active in Major Grades of Paper—Less Wood Pulp Will be Produced in November — Paper Stock Market is Dull and Prices Soft.

Office of the PAPER TRADE JOURNAL.
Wednesday, November 11, 1942.

Current sales in the wholesale paper market are reported at a relatively high level in several major grades of paper. Uncertainty as to adequate supplies in the future, under the tightening up of all goods for civilian uses, is the basic reason reflected in reports received this week from some of the many manufacturers' representatives, jobbers, and general paper merchants.

All major grades of paper are currently active. In a few instances, some distributing houses have put into effect an allocation plan, limiting deliveries, in order to supply as many customers as practicable. How much of the present purchasing is for inventories and what the proportion of speculative buying may be, is difficult to estimate at this date. In some quarters, a very substantial part of current sales volume is attributed to speculative buying, with the volume of normal trade requirements still declining.

The index of general business activity for the week ended October 31, rose to 133.1% from 131.7% for the preceding week, compared with 128.5% for the corresponding week last year. Paper board production was 4.0% higher.

Paper production for the week ended October 31 was estimated at 92.9%, compared with 108.6% for 1941, with 88.7% for 1940, with 84.0% for 1939, and with 82.6% for the corresponding week for 1938.

Paper board production for the week ended October 31 was 84.0%, compared with 99.0% for 1941, with 80.0% for 1940, with 84.0% for 1939, and with 68.0% for the corresponding week for 1938.

Newsprint Regulation 130, revised by the OPA, goes into effect on November 16. This new order is designed to prevent newspaper and magazine publishers from using improper destinations for shipments, with the object of increasing the maximum newsprint price.

Wood Pulp

A decline in the production of all papermaking grades of wood pulp is expected to begin this month in the U. S. and in Canada. The basic reason is the decrease in the pulpwood cut, due to the scarcity of men in the woods, the diversion of manpower to more essential war work, and to the production of lumber in preference to pulpwood. No drastic curtailment in pulp production is expected, and no definite information is available, as the current WPB policy is to release no informative data.

Rags

No important change in prices have been reported in new cotton rags this week. Mill buying is moderate. The trade is expecting that the OPA, before long, will establish a maximum price schedule.

Mixed rags are firm, under the influence of reported light collections.

Roofing rags are in good demand at this date. Sales are widely reported at ceiling prices.

Old Rope and Bagging

No important change has been reported in old rope this week. Old No. 1 Manila rope continues to be steadily purchased by mills.

Trading in scrap bagging continues slow. Tonnage sold is light and prices are soft, despite the scarcity of supplies.

Old Waste Paper

Demand for old waste paper is reported light for most grades. Prices on No. 1 mixed, folded news, and old corrugated are low and soft. Some reports indicate sales of No. 1 mixed at $4.50 per ton, folded news at $7.50 and old corrugated at $10 to $11 per ton.

Twine

No important change in prices or demand has been reported in the market this week. Government buying continues active and normal trade demands are fair, in major grades of hard and soft fiber twines.

Boston Paper Men to Meet November 18

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 9, 1942.—The fall meeting of the Boston Paper Trade Association is to be held November 18 at the Harvard Club of Boston. Bill Cunningham, the widely known columnist, will be the speaker. His subject is "Our Country at War."

Fire Damages Keickefer Plant

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 9, 1942—A stubborn, smoldering fire which sent thick smoke over a wide area, kept firemen busy at the plant of the Keickhefer Container Company, in Delair, N. J., for five hours until 1 o'clock this morning. It was the third blaze this company suffered in six months. The plant, which is at the foot of Derousse avenue, manufactures paper boxes. The fire started in a corrugated iron warehouse, 200 feet wide, 250 feet long and 50 feet high, which was stocked with 7,000 tons of baled paper. John Magnus, a night watchman, discovered the flames at 7:45 last night, and turned in an alarm, bringing volunteer firemen from Delaview, East Pensauken and Delaware Gardens.

Battling through the smoke, the firemen soon put out what flames there were, but experienced extreme difficulty in preventing the bales from continuing to smolder. They left the plant at 1 A. M. and company firemen took over to finish the job. For two hours during the height of the fire, smoke drifted over the River road, about a quarter of a mile from the plant, slowing traffic. Five firemen were treated on the scene for minor injuries and from the effects of smoke.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL.
Wednesday, November 11, 1942.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b., works. Demand reported good for the week.

BLEACHING POWDER — Quotations on bleaching powder are firm. Demand reported heavy for the week. Bleaching powder is currently quoted at $2.25 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 19½ cents per pound; 80-100 mesh, at 20 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, at 7½ cents per pound, c.i.f., is nominal. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda continue unchanged at prevailing market prices. Demand reported fair. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.75 per 100 pounds in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filter clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Market strong. Government demand is reported heavy during the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN — The rosin market is reported firm for the week with lower prices on some grades. "G" gum rosin is currently quoted at $3.50 per 100 pounds, in barrels. Savannah "F" wood rosin is currently quoted at $3.49 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $3.68 per 100 pounds f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand fair for the current week. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome salt cake at $16 per ton. Restrictions on chrome cake removed. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton on imported salt cake is nominal.

SODA ASH — Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported fair for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $90; in paper bags, $1.05; and in barrels, $1.35.

STARCH — Prices on corn starch are reported unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, carlots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported light for the current week. The commercial grades are currently quoted at from $1.15 to $1.25; iron free at from $1.75 to $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $15 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	●	—
Sheets	58.00	"	—
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill			
Superstandard Wrapping	$5.00	●	—
No. 1 Wrapping	4.75	"	—
Standard Wrapping	4.50	"	—
Standard Bag	4.125	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.03	"	—
White No. 1½	1.00	"	—
White No. 2	1.00	"	—
Anti-Tarnish M. G.	.95	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case			
Unbleached, Jr.	2.35	"	—
Bleached, Jr.	2.65	"	—
Manila—per cwt.—C. l. f. a			
No. 1 Jute	11.25	●	—
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	*48.00	●	—
Chip	*45.00	"	—
Sgl. Mia. Lt. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*60.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
100% Rag Ext. No. 1	$40.25 ● $47.25		$41.40 ● $48.50
100% Rag	32.20 " 37.75		33.35 " 39.25
85% Rag	.... "		32.20 " 37.75
75% Rag	24.75 " 29.00		25.90 " 30.50
65% Rag	.... "		22.80 " 27.75
50% Rag	18.70 " 22.75		19.90 " 24.25
25% Rag	16.40 " 20.00		17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers
No. 1	$10.55 ● $12.75		$11.70 ● $14.25
No. 2	9.65 " 11.75		10.80 " 13.25
No. 3	9.20 " 11.25		10.35 " 12.50
No. 4	8.90 " 10.75		10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	●	$15.20
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight to Destination.

Bl. Softwood Sulphite	$76.00
Unbl. Softwood Sulphite	64.00 ● 66.00
Bl. Hardwood Sulphite	73.50
Unbl. Hardwood Sulphite	63.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich	72.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	62.00
S. Semi-Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	66.00
Unbl. Soda	62.00
Groundwood	46.00

Transportation Allowances Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum price.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	●	8.25
Silesias No. 1	4.50	"	4.75
New Unbleached	8.00	"	8.25
Blue Overall	5.75	"	6.00
Fancy	3.00	"	3.25
Washables	2.50	"	2.75
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	*2.80	"	—
Miscellaneous	*2.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices.

Foreign Rags

All prices nominal

New Rags			
New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25
Old Rags			
No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.00	@	4.25
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	4.75
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	4.25	"	4.75
Sisal Strings	3.25	"	3.75
Mixed Strings	1.10	"	1.20

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Mixed Books	1.07½	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	1.75	"	—
Old Corrugated Containers	1.00	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)			
Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1	.07½	@	.07½
New White No. 2	.04½	"	.05
Light Silesias	.04½	"	.04¾
Silesias, No. 1	.04	"	.04¼
Black Silesias, soft	.03¼	"	.04
New Unbleached	.07¼	"	.07½
Washable Prints	.03¼	"	.03½
Washable No. 1	.02	"	.02¼
Blue Overall	.04½	"	.05¼
Cottons—According to grades—			
Washable shredding	—	"	.01¼
Fancy Percales	.03¼	"	.03½
New Black Soft	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.	.03	"	.03¼
No. 2 Mixed	.02½	"	.02½
Corduroy	.01¼	"	.02¼
New Canvas	.04¾	"	.05¼
New Black Mixed	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope	3.75	"	—
Mixed Rope	.75	"	1.00
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old Corrugated Containers	1.00	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.50	@	4.00
Sisal Rope	4.50	"	4.75
Mixed Rope	1.35	"	1.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	3.00	"	3.50
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.75	"	5.25
Jute Carpet Threads	3.25	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.50	"	3.75
Scrap Sisal	4.50	"	4.75
Scrap Sisal for Shredding	—	"	.04¾
Wool Tares—			
Foreign	(nominal)		
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.06½
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06½
Underwear Cutters, Bleached	.06	"	.06½
Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¾	"	.03½
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¾	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.30
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—
Domestic	5.00	"	5.75
Aust. Wool Pouches	5.10	"	5.25
New Burlap Cuttings	5.00	"	5.25
Heavy Baling Bagging	4.25	"	4.75
Paper Mill Bagging	2.75	"	3.00
No. 4 Bagging	1.35	"	—

* OPA Maximum Price.